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## Original Articles

### THE THERAPEUTIC ANATOMY OF LOBAR PNEUMONIA

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The purpose of the following discussion is to bring to the attention of the practicing physician the modern conceptions of the anatomy and physiology of the lungs and point out how these are related to the phenomena of lobar pneumonia and their significance in the therapeutics of the condition.

The pathology of pneumonia is well known in so far as anatomical changes are concerned, but pathology has contributed very little towards a rational therapeutics. The morbid anatomy of pneumonia is of vastly more interest at the post mortem table than at the bedside.

The principal attempts which have been made in finding a remedy for pneumonia have been along bacteriological lines. Some success has been achieved as a result of these efforts.

It is a well recognized fact that lobar pneumonia is a self-limited disease. This being the case, those measures which are palliative should find a ready application to this condition because such measures are directed towards alterations in physiological processes. For this reason let us inquire into the physiology of the condition. Probably in no disease is so little attention given to the physiology of the structures involved as in pneumonia. Yet the whole picture of lobar pneumonia, both the clinical, and the post-mortem anatomy, are due to the pathological physiology which results from the accumulation of bacteria and toxins in the respiratory tissues.

So that in order to obtain the true significance of the condition, an understanding of the lung function is necessary. In order to obtain a complete picture of lung function we must have a knowledge of the physiological anatomy of the organ.

In treatises on pneumonia one sees a very small amount of space devoted to either the

anatomy or the physiology of the normal or diseased lung, and usually what is said is not true. There is a good reason for this. Only in recent years, due to the efforts of such men as Dr. Miller of the University of Wisconsin, Dr. Dunham of the University of Cincinnati, M. Meyer, Einthoven, and others, have we come to the true understanding of lung anatomy. As to lung physiology we know very little. The physiologists talk a great deal about the "dead space," "respiratory quotient," "the exchange of oxygen and carbon dioxide," "tidal air," "residual air," "diffusion of gases," etc. The clinicians prattle much about basal metabolism, yet the physiological mechanisms of the lung which are of practical clinical significance remain unmentioned.

So as a basis for our views upon the pathological physiology of lobar pneumonia let us note very briefly the anatomy of the lung, and then indicate the physiological significance of this mechanism and apply it to the symptoms and treatment of pneumonia.

We shall concern ourselves only with the minute structure assuming that the reader is familiar with the grosser structure. The lung functionally consists of two parts.

(a) A tubular system for the passage of inspired and expired air, and provisions for warming and moistening the air; and (b) A respiratory mechanism where the exchange of oxygen and carbon dioxide between the air and blood occurs.

The tubes are rigid walled structures consisting of a series of rings or segments of cartilage alternating with bands of connective tissue. This arrangement results in a system of tubes which are non-collapsible, but yet are capable of motility.

It is also to be noted that at no place do the cartilages completely envelope the tubes. The intervals between the cartilaginous segments are bridged by connective tissue and muscle and in the trachea and larger bronchi the muscle fibres run both longitudinally (trachealis muscle) and circularly. By this mechanism the tubes cannot only be narrowed (constricted) in their transverse diameter, but also shortened, a mechanism similar to the musculature of the gastro-intestinal tract from which the lung is embryologically derived. Haldane calls atten-

tion to variations in capacity ranging from 150 c.c to 600 c.c. under varying conditions.

In the outer layer of the mucous membrane there is a well developed muscularis mucosae formed of circular fibres, and as the smaller terminal air tubes are reached this musculature becomes relatively much better developed.

What have we, therefore? Simply this, a system of branching tubes, similar in structure

to the intestinal tract, enclosed in non-collapsible cartilaginous tubes. This muscular inner tube can contract and relax, constrict and shorten, just as does the intestine, and this it does in a continuous rhythmic manner. It is an automatic transport system regulated by a nerve mechanism exactly similar to that of the alimentary tract, as described by Keith.

It is also to be remembered that glands are

found only in this part of the tract. There are

no glands in the respiratory portion of the lung.

The significance of this fact will be pointed out

later. The above statements relate only to the

air passages.

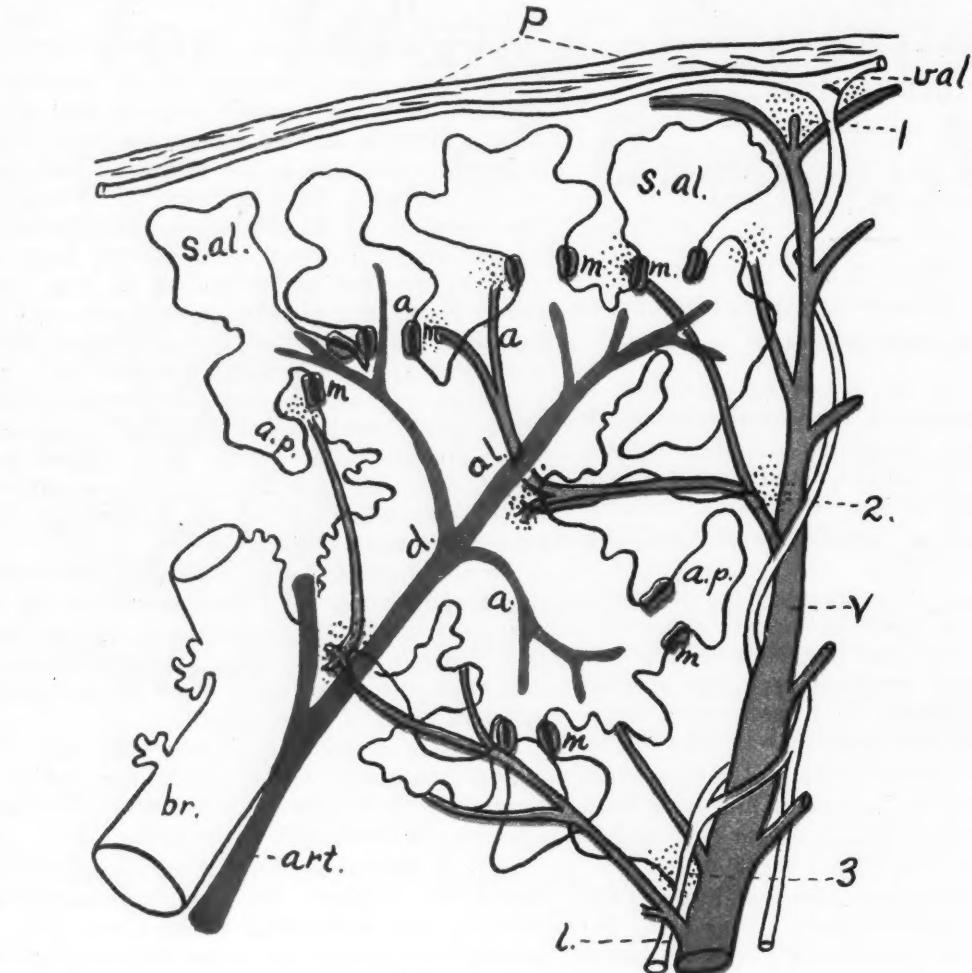


Figure 1—Modified from Miller

br.—R.—Bronchiolus respiratorius  
d.al.—ductus alveolaris  
a—atria

al.s—alveolar sac  
al—alveolus or air cell  
s—sphincter

to the intestinal tract, enclosed in non-collapsible cartilaginous tubes. This muscular inner tube can contract and relax, constrict and shorten, just as does the intestine, and this it does in a continuous rhythmic manner. It is an automatic transport system regulated by a nerve mechanism exactly similar to that of the alimentary tract, as described by Keith.

It is also to be remembered that glands are found only in this part of the tract. There are no glands in the respiratory portion of the lung. The significance of this fact will be pointed out later. The above statements relate only to the air passages.

Now let us note the anatomy of the respira-

type and terminating in flat non-nucleated plates—typical respiratory epithelium. There are no glands.

The respiratory bronchioles terminate by branching into alveolar ducts. The alveolar ducts terminate in a variable number of atria. These in turn bear the alveolar sacs and the sacs have many alveoli which are in contact with the blood capillaries.

It is around the alveolar sacs and alveoli that the blood circulates and from these structures the oxygen passes from the air to the blood and the carbon dioxide passes from the blood into the air. Structurally the air ducts and sacs consist of elastic connective tissue and epithelial

cells. The circular muscle fibres terminate at the point at which the duct passes into the atria and there the muscle fibres form a *sphincter*.

The blood circulates through a system of capillaries around the air cells and the blood is

This gives us, therefore, a mass of bulb-like structures (alveolar sacs) with elastic walls. The opening in the bulbs are guarded by a sphincteric muscular mechanism. How does it work? When the chest expands, the sphinc-

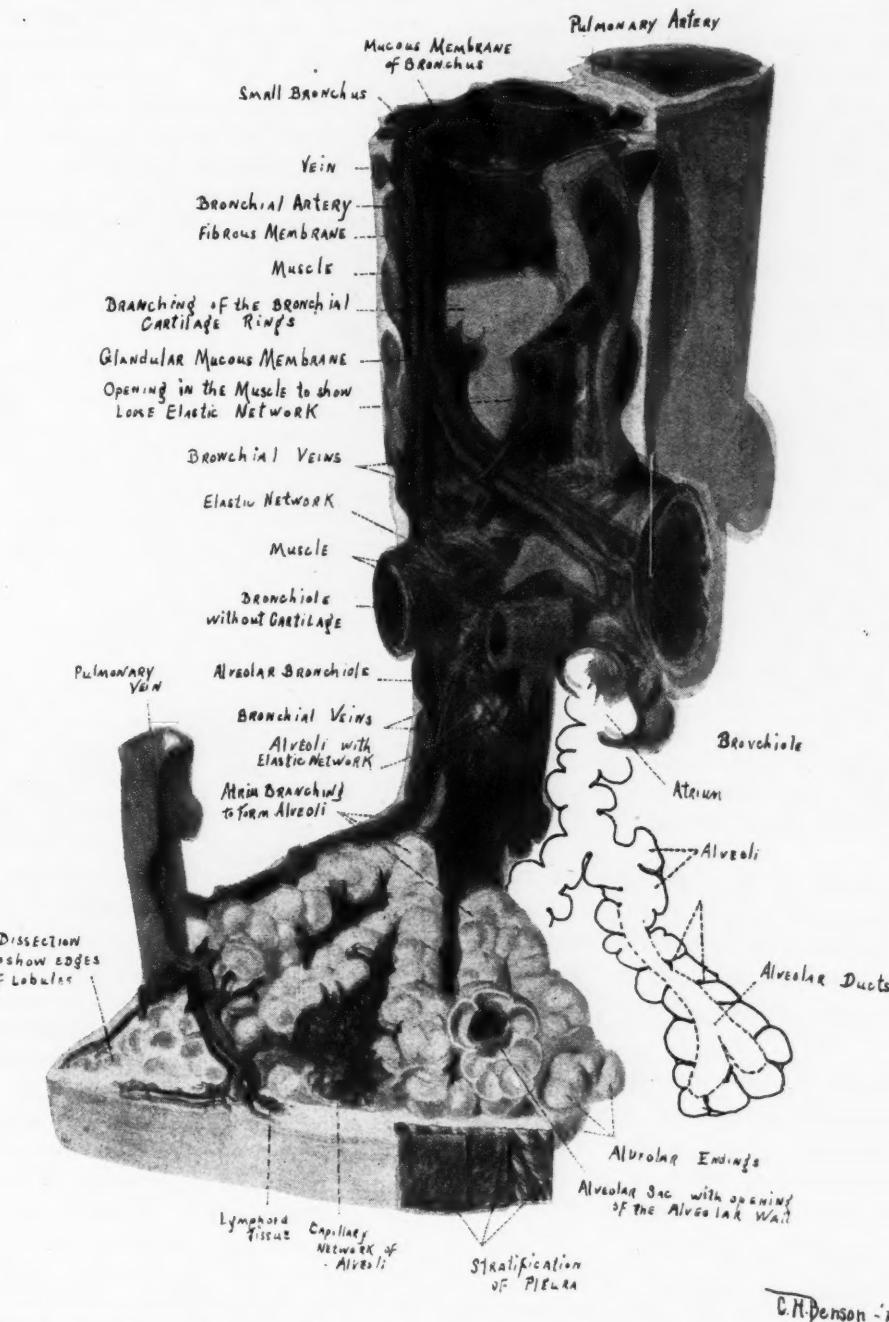


Figure 3—The above is an illustration of the detailed anatomy of the lung according to Hermann Braus. Note the musculature distributed along the air passages and extending to the atria where it forms a sphincter.

separated from the air in the alveoli by a single layer of epithelial cells which line the air cells and a slight amount of fibro-elastic connective tissue which supports these cells, and by the endothelial cells of the capillaries. So that between the blood and the air are two thin flat epithelial cells and a negligible amount of connective tissue.

ters relax, the air as it rushes in, distends the elastic sacs. At the end of respiration, by virtue of their elasticity, the sacs expel the air, the sphincters close and lung is at rest. This is an automatic mechanism. It is controlled and correlated with the peristaltic transport mechanism of the air tubes. The vagus nerve causes contraction (constriction) of the tubes

and closure of the sphincters. The sympathetic nerves cause a relaxation (dilatation) of the tubes and an opening of the sphincters. We shall point out the clinical significance of this mechanism later in the discussion.

As the blood vessels approach the respiratory portion of the lung (the lung unit or lobule) the artery follows the bronchioles and respiratory ducts. The veins originate at the point at which the alveolar ducts terminate in the atria. From there the contributory venules pass to the interlobular septa where they unite and reach the bronchioles in the tubular portion of the lung on the side of the bronchiole opposite the artery.

Around each atrium is a more or less dense mass of lymphoid tissue. It is here that the lymph vessels take origin and pass in two directions.

(a) One set courses with the blood vessels to the root of the lung following the course of the veins in the interlobular septa. (b) The others pass in the septa to the surface of the lung to the nodes of the hilus. The vessels which pass to the pleura contain a valve just where they empty into the pleural vessels. This valve permits the flow of the lymph from the parenchyma of the lung into the pleural vessels, but prevents the flow of the lymph from the pleural vessels into the lung substance. The clinical significance of this fact will be pointed out later.

Now to apply the above facts to the condition encountered in lobar pneumonia.

In pneumonia the physiological manifestations are:

1. Red cheek on side of involved lung—vaso-dilation.
2. Dry parched lips—impaired secretion.
3. Rapid respiration—poor aeration.
4. Contracted chest—spastic muscles and pain.
5. Diminished lung excursion—spasm.
6. Shallow respiration on affected side—pain and spasm.
7. Rapid, bounding pulse—acute infection.
8. Gastro-intestinal symptoms—toxemia.
9. Increase in rate of heart.

The pathological or anatomical picture shows a filling of the air cells, air sacs and alveolar ducts—congestion. At first red blood elements are present (red hepatization), later gray hepatization, crisis, resolution, or resolution by lysis.

What is the cause of these phenomena? The exciting cause is bacterial—an acute infection. How does an acute infection affect the lung? Let us see how it affects other parts of the body which are anatomically and functionally similar to the lung.

What happens in acute appendicitis? The

heart condition is similar to that found in pneumonia. There is a spasm or disturbance of the peristaltic mechanism of the intestine. There is congestion, hypo-stasis of the blood, and an accumulation of bacterial products, blood exudates, etc., in the appendix. How would you regard the prognosis if the peristaltic action of the appendix and intestine could be kept going, the circulation could be kept moving and the waste products could be carried away? Would you not consider the prognosis good? Does not an acute infection always result in a spasm by deranging the neuro-muscular mechanism involved? This is accounted for because the vagus nerve which produces the spasm ends in intrinsic visceral ganglia. The sympathetic ganglia are far removed from the source of infection and are not, therefore, irritated. See Figure 2.

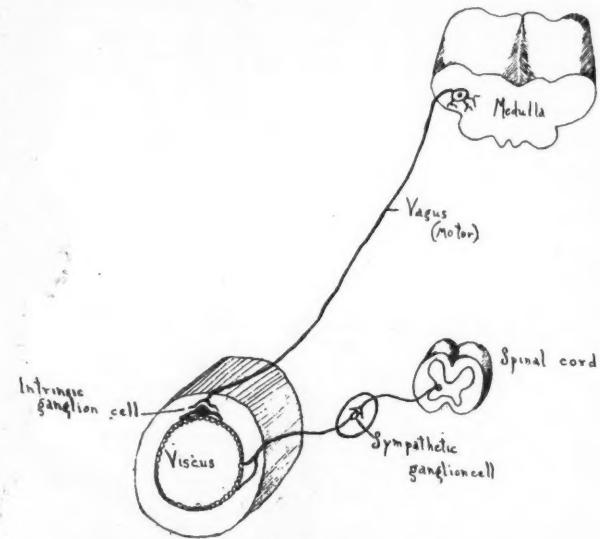


Figure 2

Now let us apply this condition to the lung. The bacterial irritation, whether from toxins or bacterial activity, result in excessive stimuli passing to the intrinsic vagal ganglia. The sympathetic ganglia, being far removed, are not affected. Thus the equilibrium between the vagus and sympathetic is disturbed.

The peristaltic mechanism, therefore, becomes paralyzed or spastic. The sphincters of the atria contract. What is the effect? First, the respiratory exchange is impaired. The condition found in asthma results. There is difficulty in breathing. What effect does this have upon the circulation? A very important factor in the flow of venous blood is muscular contraction. This is an essential physiological fact. The rhythmic contraction of the intestinal musculature forces the blood into the veins. So in the lung the rhythmic contraction and relaxation of the musculature facilitates the blood flow. In other words, it serves the function of a "massage" to the vessels.

When this mechanism is paralyzed or becomes spastic the flow of blood is impeded,

hypo-stasis and congestion results. Transudation occurs. The alveoli fill with blood elements which mix with the bacteria and their products. The elastic alveolar sacs and air cells distend. They cannot empty because their sphincters are closed.

The heart, having lost the assistance of the "massage" effect, has to force the blood through the inactive lung. This results in increased rate and force of the heart in order to overcome the inertia of an inactive lung. This is the stage of red hepatization. The condition persists and more or less degeneration (liquefaction necrosis) occurs, bacterial activity decreases and the stage of gray hepatization results. Finally, due to the cessation of the irritation, the spasm passes off. The peristaltic mechanism resumes its activity, the sphincters relax, by virtue of their elasticity the alveolar sacs and cells empty their contents. The peristaltic mechanism delivers this to the mouth and the lungs are thus cleared. The circulation is improved, temperature falls, resolution has set in. The passing off of the spasm is the crisis. If the spasm does not pass off from all the involved musculature at the same time resolution is delayed, and results by lysis. If secondary infection results, or some other irritative factor intervenes, relapses may occur.

Pleurisy may result because infective material can readily pass to the pleura through the lymph stream. If the tuberculosis bacillus should enter the lymphoid tissue around the atria may become involved—this is the point at which tuberculosis attacks the lung.

If our conclusions as to the physiological condition are correct what therapeutic measures are indicated? Measures to provide:

- (a) Oxygen, because the respiratory portion of the lung is impaired.
- (b) To relieve the spastic condition and restore activity to the peristaltic mechanism.
- (c) Counteract the bacteria.

It is generally observed that cool or even cold fresh air is of value in lobar pneumonia, but in bronchial pneumonia warm, fresh, moist air is better suited to the condition. What is the physiological explanation of the difference?

The air tubes warm and moisten the air. These are not involved in lobar pneumonia. The secretory portion of the tubes are unaffected. But in bronchial pneumonia the tubes which warm and moisten the air are affected, so warmth and moisture should be provided for.

To relieve the spasm, drugs should be selected with this end in view. The one most familiar to us which may relieve the spasm is atropine. The drug inhibits the vagus. Since the vagus irritation produces the spasm, inhibition of the vagus relieves it, restores the peristaltic mechanism, relieves the heart from the

depressor effect of the vagus, and thus the rate and force of the heart increases. It may be objected that speeding up of the heart is dangerous. The cause of heart failure in pneumonia has been shown to be due to deficient aeration of the blood and not from overwork or toxemia. Belladonnae is recommended by some just at the time of expected crisis. The idea being that it lessens secretion of the air cells and ducts, but these do not secrete because they do not possess any glands, so this idea is erroneous, but it does assist in relaxing the spastic musculature and thereby facilitates resolution. So why not attempt to prevent the spasm, or relieve it by similar measures earlier in the disease?

Diathermy, if efficacious, acts by relaxing the bronchial musculature. Some favorable reports have been made as the result of diathermic treatment. The experimental work with this method of treatment indicates that the effect is to raise the temperature of the tissues under its influence. It is an old and well recognized fact in therapeutics that heat is a sedative and is often made use of in order to relax a muscle spasm, e. g. the "Sitz bath." So that diathermic effects, if beneficial, can be explained by the fact that it relaxes the sphincters of the atria which we have described above.

Another part of the physiological reaction in pneumonia is evidenced by changes in the blood. This is a phase of the picture often overlooked by the pathologist, who too often sees only the morbid anatomy, yet the blood condition is a very important element in the physiological pathology.

This phase of the condition can be influenced by the drug mercury. One Japanese worker and one American working in Japan and an English physician first demonstrated the effect of the salts of mercury on the blood. The effect of these salts is to increase the leucocytes and especially the phagocytic leucocytes. This is probably the secret of the marked effect of calomel in acute infections, whereas the cathartic effect is a side effect. Workers at the Rockefeller Institute have confirmed the conclusions of the Japanese and English investigators and some months ago brought out a mercurial salt intended for intravenous administration for the purpose of increasing the phagocytic leucocytes.

Quinine will increase leucocytosis, but it is a protoplasmic poison. That is why it kills the malarial parasite, and while it increases the production of leucocytes, it requires large doses to do it and it also inhibits leucocytic activity. However, it has been suggested by Dr. D. E. Jackson that hydrochinone, a drug pharmacologically similar to quinine, stimulates visceral muscle through its effect upon the suprarenals. This would relieve the bronchial spasm by acting on the sympathetic.

A chemical study of the blood in pneumonia gives us an insight into the oxygen condition, and internal respiration. The table below, which was prepared as a summary from the work of Stadie, gives us some idea of the oxygen state and its significance in pneumonia.

TABLE  
UNSATURATION OF OXYGEN

	Pneumonia			Range
	Normal	Non-fatal	Cyanosis	Fatal
Arterial	5%	13.9%	24.7%	32%
Venous	26.8%	36.3%	44.5%	57%

Unsaturation of over 20 per cent usually means a fatal termination.

The perusal of the above facts clearly indicate the need of oxygen in the course of the disease.

#### CONCLUSION

We have attempted to show that:

- (1) The lung possesses a peristaltic mechanism.
- (2) The lung circulation is facilitated by this mechanism due to its "massage" effect.
- (3) The respiratory sacs are guarded by sphincters and these sacs are involved in pneumonia, and become spastic.
- (4) An irritation of the mucous membrane by bacteria and toxins can produce a spasm of the sphincters and peristaltic mechanism.
- (5) This paralysis, by impeding the circulation, respiration, etc., accounts for the pathological and physiological condition in pneumonia.
- (6) The sudden passing of the spasm is marked by the crisis, and the resumption of peristaltic activity constitutes resolution.
- (7) Belladonna compounds should be used to relieve the spasm and mercurial salts to combat the bacteria by increasing the phagocytic leucocytes.
- (8) That if diathermy proves to be of value that it will be because heat has the therapeutic effect of acting as a sedative and relaxing muscle spasms.
- (9) Cold, fresh air is well borne and beneficial in supplying oxygen, and the need of oxygen can be determined by a chemical examination of the blood.

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## "THE KIDNEY IN ITS RELATION TO DISEASE"

### THE CLASSIFICATION, RECOGNITION, AND TREATMENT OF CHRONIC NEPHRITIS

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It is now nearly one hundred years since Richard Bright published his "Reports of Medical Cases" (1827), containing his original description of essential nephritis and the epoch-making distinction between cardiac and renal dropsy. Although Saliceto as far back as 1476 had pointed out the association of dropsy, scanty urine and hardened kidneys, and Wells in 1811 had shown the relationship between dropsy and albuminous urine, Bright was the first to correlate albuminuria, dropsy, cardiac hypertrophy and hardened kidneys, and to describe the disease entity which has since borne his name.

If Bright were among us today he doubtless, could still, with his remarkable powers of clinical observation and by heating a test tube of urine, correctly diagnose the disease that now bears his name, but he would probably be much mystified by our discussion of renal casts, infections, kidney functional tests or blood chemistry. It must be recalled that in Bright's time microscopes were not in general use, infections played no role in medical discussions, since bacteria were undiscovered, and that Liebig, one of the fathers of physiological chemistry, had just established his laboratory in Giessen.

As we look back over the history of diseases, we often see a first clear description of a certain disease entity, and then attempts to further differentiate and classify the condition. This century old attempt to classify nephritis is a very interesting but also a very long and somewhat confusing chapter,

which I will attempt to sketch in its barest outlines, only.

The attempt to classify nephritis began first, as was natural, with the pathological anatomy of the kidney and only a few years after the publication of Bright's paper we find Rayer describing four types of chronic nephritis. For many years we see the most intense study of the kidneys in nephritis, but in spite of this immense amount of work Rindfleisch in 1867, forty years after Bright's paper, declared that "the pathological anatomy of the kidney is certainly the subject that has stimulated the most investigation and yet today it is the least complete chapter of the whole work."

The best known classification which has survived this era of intensive pathological study is that of Wilks, who described "the large, white kidney with considerable dropsy" and "the hard, contracted kidney, often destitute of symptoms." This classification later adopted by Virchow, who rechristened these types "parenchymatous nephritis" and "interstitial nephritis" is, as Stevens remarks, "a simple one and still has its advocates" but "it unfortunately has failed to harmonize the clinical and anatomical findings."

A very great problem which troubled the pathological anatomists from the beginning has been to separate the inflammatory type of kidney lesion from the degenerative type. Many excellent pathologists have protested from time to time against diagnosing a kidney "chronic nephritis" when a careful study of sections of that kidney showed the changes to be largely degenerative in nature. This point of view was stressed particularly by Frederich Muller who suggested in 1905 that the term "nephritis" be restricted to true inflammatory lesions of the kidneys while he proposed the term "nephrosis" to describe the degenerative lesions.

This differentiation of Friedrich Muller's has steadily gained ground. The remarks of Munk made in the 1925 edition of his work on "Diseases of the Kidney" are of interest. "We distinguish," he says, "most sharply between the degenerative form of kidney disease and the inflammatory form, because it makes the clinical pathology of the kidney not more complex, but on the contrary, much simpler and clearer."

Much information of value has been obtained in recent years as the result of studies on experimental nephritis and on renal functional tests. Ambitious attempts have been made to differentiate or even classify renal disease on the basis of the kidneys' response to the injection of various substances. Such

work has been quite fascinating in many ways, but no classifications based upon it have, as yet, stood the test of later observations.

One lesson particularly that has been learned from the studies on experimental nephritis is the selectivity with which certain chemicals strike definite parts of the kidneys. This observation agrees with those of the pathologist who has observed a similar tendency in disease and has spoken of a tubular as contrasted with a glomerular nephritis. A very well known classification, that of Volhart and Fahr, is based partly upon this differentiation between glomerular and tubular pathology. This classification of Volhart and Fahr is in many respects a splendid one, but is, like Aschoff's, just a bit too complicated for the clinician to carry on the tip of his tongue.

A very distinct contribution to the simplification of classification initiated by Friedrich Muller was made by Lohlein in 1910, who asserted that only one form of kidney disease deserves the name "nephritis" and that is diffuse glomerulo-nephritis. Glomerulo-nephritis, according to him, represents not only an anatomic, but also an etiologic entity, and is caused by bacterial toxins, most commonly those of the streptococcus. Ophuls, one of the most careful students of nephritis, agrees in the main with the conclusions of Lohlein and has emphasized for a decade the role of the streptococcus in the production of chronic nephritis.

A review of the classifications of nephritis during the past fifty years shows increasing clearness, simplicity and a closer approach to a classification based on etiology. A comparatively simple classification which is accepted by most students of renal diseases, would group nephritis into the following groups:

1. Nephrosis—degenerative Bright's disease.
2. Arteriosclerotic kidney disease.
3. Glomerulo-nephritis.

This classification is workable, easily remembered and is based on etiological and therapeutic considerations.

The first great group of cases that offer difficulties in the diagnosis of chronic nephritis are the cases of that very common and widespread affection to which the term "essential hypertension" has been applied. The recognition of this disease is distinctly an achievement of the present generation—the work of Albutt, Huchard, Janeway, Mosenthal and others. Before their careful studies were made, most cases with high blood pressure were diagnosed as chronic nephritis.

Essential hypertension is easily the com-

monest cause of elevation in blood pressure. In our experience it is ten times as frequent as high blood pressure, due to a chronic nephritis.

The reports of pathological findings in such patients are extremely variable, some observers finding kidneys that are practically normal while others stress the presence of fibrosis of the renal arterioles—the so-called arteriolosclerosis. Fishberg, in a very important contribution to this subject found arteriolosclerosis of the kidney vessels in every one of seventy-two cases of essential hypertension coming to necropsy, although only five had renal insufficiency. He emphasizes that these changes are also extremely common in the vessels of other organs and states that "the anatomic changes in the kidney cannot be reconciled with the theory that essential hypertension is due to a disorder of renal function."

The cause of essential hypertension is still a matter for dispute and speculation. There is some evidence that accumulation of some product of metabolism having a pressure effect, such as guanidine, may be concerned. Whatever the cause, there is an increasing belief among both clinicians and pathologists that the hypertension is primary and the thickening of the arterioles is the result of this increased strain on the vascular system.

The diagnosis of these patients with essential hypertension does not as a rule offer great difficulty. The blood pressure is often very much higher than in chronic nephritis and may show much greater daily fluctuations. The heart is often markedly enlarged and the cardiac symptoms much more pronounced than in chronic nephritis. The urine may contain albumin and casts, but a study of the functional ability of the kidney shows it to be unimpaired and the blood urea, non-protein nitrogen and creatinine are usually normal. The output of urine in early cases is usually normal and it has a good specific gravity.

This disease, essential hypertension, as it advances, attacks particularly the heart and the brain, the victims usually die from cardiac failure or cerebral hemorrhage and not from kidney insufficiency.

The nephroses or degenerative kidney diseases are seen most commonly in the course of an infectious disease such as typhoid, diphtheria, malaria, pneumonia and influenza. They occur also as the result of some focal infection, such as an abscessed tooth, or an infection of the sinuses. Many of us recall patients with a persistent albuminuria, accompanied by urinary casts, which cleared up completely following the removal of in-

fected teeth or the drainage of an infected antrum.

Another well known group of nephroses are those following poisoning with such substances as bichloride of mercury, phenol, chromic acid, lead and arsenic, particularly in the form of salvarsan. It is noteworthy that the pathological changes in such kidneys are largely in the tubular epithelium and that they often proceed without any marked elevation in blood pressure. This has led many observers to the belief that elevation in blood pressure is usually an indication of involvement of the kidney glomerules while a pure tubular process may become quite marked without changes in the blood pressure. The diagnosis of a nephrosis due to poisoning by the above substances is usually apparent from the clinical history and in cases caused by the salts of heavy metals, such as mercury or salvarsan, good therapeutic results are often obtained with sodium thiosulphate as advocated by Dennie and McBride.

One type of nephrosis, the lipoid, often called in this country Epstein's nephrosis, forms such a distinctive clinical and pathological picture as to justify its consideration as a distinct disease entity. Patients suffering from this condition present a marked tendency to edema, with a high grade albuminuria, the kidney functional tests may be normal but further study shows that their blood serum contains more globulin than albumin, the blood contains very large amounts of cholesterol and their basal metabolic rate is much below normal.

This distinctive triad, inversion of the normal ratio of serum albumin to serum globulin, hypercholesterolemia and low metabolic rate, is usually sufficient for the diagnosis. Epstein has reported good results in the treatment of these patients with thyroid extract and has suggested that this condition is a disease of metabolism. In a patient whom we recently studied the presence of the striking lipoid degeneration in the liver as well as in the kidneys, is suggestive confirmatory evidence that we are dealing with a metabolic disease.

Other types of nephrosis which should be mentioned are the syphilitic nephrosis and the kidney of pregnancy. Syphilis, according to Munk, may produce a typical lipoid nephrosis which may later go on to a contracted kidney.

The second great group of nephropathies, the arteriosclerotic kidney is, it must be emphasized, only one feature of a generalized vascular disease—general arteriosclerosis. In both the diagnosis and the treatment we must remember that we are dealing with a

general arteriosclerosis in which the kidney involvement is only one aspect of the disease.

An interesting contribution to the history of arteriosclerosis is that of Ruffer, who reported in 1911 the results of his studies on arterial lesions which are very common in Egyptian mummies and he remarks that the etiology of arteriosclerosis "three thousand years ago is as obscure as it is in modern people." Ruffer points out that the people in ancient Egypt did not use tobacco, that they did not suffer from syphilis, that they did not live on a high meat diet, but on the contrary subsisted mainly on a vegetable diet, and finally that they were not habitual drunkards. In regard to the importance of alcohol in the etiology of arteriosclerosis he adds that "during the Mussulman pilgrimage, I have made over eight hundred post-mortem examinations of people who had certainly never touched alcohol in their lives, and I have found that disease of the arteries is certainly as common and occurs as early in total abstainers as in people who take alcohol regularly."

If the above views from the standpoint of the etiology of arteriosclerosis may seem pessimistic, it is at least comforting to reflect that many patients may have a high grade of arteriosclerosis and yet live for years in comparative comfort and health. Others, however, develop early a high blood pressure and later die in uremia. The difference between these two groups is apparently a difference in the involvement of the arterial system. One patient has his arterial lesions mainly in the larger vessels, while the other shows early an intense involvement of the renal vessels.

We have unfortunately no means at hand by which we can check the development of arteriosclerosis in the kidneys. We can, however, spare these diseased kidneys by ordering our patients to ease up on their mental and physical activities, to avoid excess in eating, especially of protein and salt, to keep their bowels open and to keep their skin in good condition by daily tepid baths. Such patients should also be warned against the excessive use of tobacco and tea or coffee are best omitted from the diet.

While in many elderly patients arteriosclerosis represents perhaps only a general expression of senility, a sign that the vascular machinery is wearing out, there is a group of patients, much larger than one might suppose, who have at forty, arteries that should belong to a man of eighty. Perhaps as Osler expressed it, Nature has endowed these individuals with bad tubing, and such a tendency seems to run in certain families.

However, while we are increasing the life span of man it may not be too optimistic to hope that we may in time lengthen the life of his arteries. Such work as Newburgh's, pointing out the damage that high protein diets causes to the vascular system is very suggestive. Let us hope that further study of the dietary errors and toxic factors in patients with such precocious arterial senility may give these patients as hopeful a future as the diabetic has today.

The third great group of nephropathies—diffuse glomerulo-nephritis—is a true inflammatory lesion of the kidneys. The acute types are usually frankly infectious, following commonly acute tonsillitis, impetigo, various skin or subcutaneous infections, abscessed teeth or scarlet fever. In the majority of cases recognition of the primary source of infection with appropriate treatment is followed by gradual recovery. In other cases the primary inflammation subsides but does not disappear and continues throughout months or years with ever increasing destruction of the kidney tissue until the picture of a chronic diffuse glomerulo-nephritis results.

The etiologic relationship of the streptococcus to this type of nephritis is very close, yet attempts to produce the picture of a chronic diffuse glomerulo-nephritis in animals by the injection of cultures of streptococci have met only with partial success. One point in connection with such experimental work, however, has not been sufficiently stressed and that is the specificity of certain strains of streptococci for the renal tissue. Two strains of streptococci with identical morphological and cultural characteristics may behave quite differently on intravenous injection, one producing kidney lesions while the other causes no damage to the kidney.

In the diagnosis of chronic diffuse glomerulo-nephritis, particularly in the early stages, the most important and often neglected procedure is a careful study of the urine. In the later stages when two-thirds or more of the secreting kidney tissue is destroyed we begin to note elevation of the blood pressure, increase in the blood urea and creatinine and a poor response to such kidney functional tests as the phenolsulphonephthalein test and the creatinine test.

Addis has recently emphasized the importance of studying the urine in these patients and has shown that we may not only diagnose but also classify kidney disease by a study of the urine. He points out the constant presence of red cells in the urine of patients suffering from glomerulonephritis and suggests the term hemorrhagic nephritis

to differentiate this type from the degenerative and arteriosclerotic types. He has also called attention to the grave prognostic import of large broad casts in the urine.

Chronic glomerulonephritis shows from time to time acute or subacute exacerbations, characterized by the appearance of slight fever, a diminution in the output of urine and the appearance of showers of casts and red blood cells in the urine. During such periods the patient should be put at complete rest in bed, placed on a "milk and flour" diet as the Germans express it, the fluid intake restricted to one and one-half liters, catharsis instituted and the patient protected from chilling. Diuretics are of doubtful value but a mild alkaline diuretic may be of aid at times.

With the institution of these measures, the physician has not done his full duty unless he has made a most careful search for possible etiological factors, infectious toxic or dietary, and sought to remove them. For in the later stages of glomerulonephritis, therapy is unfortunately of little avail. We may stimulate the flagging heart, we may remove serious effusions, we may make the sufferer more comfortable, but he is doomed and we know it.

Renal functional tests are of great value in differentiating chronic nephritis from other conditions associated with arterial hypertension, and they aid materially in prognosis. But let us by no means fail to study the urine with the greatest care. A careful estimation of the urinary output, its specific gravity, a microscopic study of the urinary sediment will usually give us the information we need most months or even years before our renal functional tests are of aid.

In conclusion, the simple classification of Bright's disease in three types—nephroses or degenerative, arteriosclerotic and glomerulonephritis or hemorrhagic, is one that meets our usual clinical needs. In the study of our patients our main reliance should still be the measuring glass, the urinometer, the test tube and the microscope.

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#### ACUTE NEPHRITIS IN CHILDREN AND THE RELATION OF CHILDHOOD AFFECTIONS TO THE KIDNEY IN ADULT LIFE\*

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There are certain conditions which can very well be studied in childhood because during this age period they exist in their simplest form. The various forms of nephritis are examples of such conditions. I shall use the same classification adopted by the previous speaker, and shall mention particularly two forms of nephritis as they occur during childhood and which may lead to the third form in adult life. These two forms are the "tubular nephritis" or "nephrosis" (sometimes called parenchymatous nephritis), and the "glomerular" or "hemorrhagic" nephritis.

The term "nephritis" is, in a way, a misnomer. The conditions which we refer to as "nephritis" are essentially general diseases in which the kidney is particularly affected, but is not the only organ involved.

We will consider first the tubular nephritis or "nephrosis." In this condition, the onset of symptoms is usually insidious. There is a gradual increase in edema which may ultimately become extreme. The urine is scanty, concentrated, often highly colored and contains very large amounts of albumin and numerous casts. It is, however, never "smoky" because it does not contain blood. This latter is an important differential point between tubular nephritis and glomerular or hemorrhagic nephritis.

In tubular nephritis there is little or no impairment of renal function. Phenolsulphonphthalein excretion is normal. There is no retention of non-protein-nitrogen in the blood and no retention of chlorides. The blood chlorides, indeed, are likely to be lower than normal. There is no increase in the blood pressure and no change in the

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eye grounds. Acidosis does not occur and there are no changes in the systemic capillaries of the body such as we shall see are characteristic of other forms of nephritis. A secondary anemia rapidly develops and the proteins of the blood serum are diminished as well as the corpuscles.

The kidneys in this form of nephritis are large and white and there is an extensive degeneration of the cells of the renal tubules. There are no interstitial changes nor involvement of the glomeruli, and no bacteria present. Changes in the kidney are such that complete regeneration may occur, provided the cause of the condition is removed.

You have all seen cases of this type,—“the large white patient with the large white kidney.”

What is the cause of this condition? In childhood, the most frequent cause of this form of nephritis is infection. In the adult other toxemias may be the cause. In children, the staphylococcus is the most frequent infecting organism, and it has been our experience that the most frequent location of this infection is in the nasal accessory sinuses. It is our custom, on seeing a child with the symptoms described, to first of all examine the nose and throat and our search is usually rewarded by the finding of definite pus in one of the nasal accessory sinuses. The infection is most likely to be in the maxillary antra.

When such an infection is found and appropriately treated, the symptoms of nephritis, in most instances, rapidly disappear and do not return unless a reinfection occurs.

Staphylococcus infections elsewhere can lead to a similar picture. Osteomyelitis and certain staphylococcus skin infections are sometimes accompanied by this same form of nephritis.

It is of interest to know how the infection brings about the condition. Some very interesting observations on this point have been made by Dr. S. W. Clausen, a former associate of mine. Dr. Clausen found a peculiar substance present in the blood and urine of these patients at the time edema was present. The substance in question has a marked physico-chemical effect in that it alters the surface tension. This lowering of the surface tension of the blood can be determined readily by weighing a number of drops of serum. The drops are smaller and weigh less than the drops of normal serum. The same is true of the urine excreted by these patients.

Clausen isolated the substance in question from the urine and showed that it has the

property of changing the permeability of both living and dead membranes. This phenomenon can be readily demonstrated in the case of a collodion sac. If such a sac is filled with hemoglobin solution and immersed in normal saline, no hemoglobin passes through, but if a small amount of the peculiar substance isolated from the urine of nephritic patients is applied to the colloidion membrane the hemoglobin can be seen to pour through into the surrounding solution. This is probably the explanation of the permeability of the kidney to albumin. A similar change in permeability of the cell walls throughout the body may well be a factor in producing the edema.

We know that the edema is not due to retention of either salts or water by the kidney. We have, in fact, seen cases where the edema occurred before there were any changes in the urine. The edema is due to retention of water by the tissues and if the water can once be released from the tissues the kidneys excrete it well.

When the focus of infection is cleared up, the peculiar surface active substance disappears from the blood and urine and at the same time the edema disappears. The edema is due to a general change throughout the body. The cells of the renal tubules are especially involved, possibly because the substance in question is excreted through the kidney in considerable concentration.

All methods of treatment of nephrosis fail unless there is recovery from the local infection. Regulation of the diet alone will not cure the disease. If salt and water are restricted the edema may be diminished, it is true, but the effect is purely symptomatic and no permanent good is accomplished. On the other hand, these patients may be given water *ad libitum* and still rapidly lose the edema provided the infectious cause is removed.

When the infection is present the administration of salt increases the edema and it is therefore usually desirable to restrict salt. Water usually need not be restricted unless the edema and ascites is so marked as to embarrass respiration. A high protein diet is indicated, children usually being given 2-3 gm. of protein per kilo of body weight per day. This amount of protein produces only good effects. Animal protein is of more value than vegetable protein as it is a better repair food. The patient's general nutrition must be kept up; he should be given green vegetables, cereals and the other articles included in a good general diet.

Sweating and catharsis remove no harmful substances and tend to weaken the patient.

Diuretics, particularly of the purin series, such as theobromin-sodio-salicylate (diuretin), are sometimes effective and lead to a disappearance of the edema and apparently do no harm in this form of nephritis. It is interesting to note in this connection that diuretin is the physico-chemical antidote to the peculiar toxic substance present. Diuretin raises the surface tension of the blood, whereas the other substance lowers the surface tension. It is possible that the action of diuretin is due to this effect and that it merely changes the physico-chemical equilibrium throughout the body, so that water is liberated, its action being general rather than a special one on the kidney.

Let us now consider the second type of nephritis which differs so greatly from the preceding form as to constitute an essentially different disease. This second form is also a general disease, dependent upon infection, but the changes in the body and prognosis and treatment are entirely different. The symptoms of glomerular or hemorrhagic nephritis begin abruptly and may be preceded by a febrile disturbance, frequently a sore throat. The patient appears acutely ill, is listless and there may be slight puffiness of the eyelids, but the edema is never of the severe degree observed in cases of nephrosis.

At the onset the urine may be temporarily suppressed, but on the other hand there may be profuse diuresis. After the first few days the volume of the urine is normal. The most striking characteristic of the urine in glomerular nephritis is its "smokiness" due to the presence of red blood cells. Albumin is present in but moderate amounts. There are casts, which are at first granular and later hyalin.

There is definite evidence of renal insufficiency. The non-protein-nitrogen, urea and chlorides of the blood are increased. Phthalein excretion is below normal. Uremic symptoms are often present, such symptoms being of less prognostic significance when occurring at the onset than when occurring later in the disease.

The blood pressure of these patients is invariably elevated at some stage of the disease and there are characteristic changes in the eye grounds.

Acidosis, accompanied by air hunger, is seen in the more severe cases.

The kidneys in this condition are large and red in the early stages of the disease. Later they are large and white with petechial hemorrhages. In cases of long duration the kidneys become definitely contracted. The capillaries in the renal glomeruli are congested and later sclerosed.

Not only are the capillaries of the kidney involved, but also the capillaries in other parts of the body. These capillary changes can be readily observed at the base of a finger nail. This can be done by moistening the skin with glycerin or cedar oil and examining under the low power of the microscope in a strong beam of direct light. The capillaries of patients with glomerular nephritis are found to be tortuous and there is a spastic contraction of the arterial and a distention of the venous limbs. Following an attack of hemorrhagic nephritis the capillaries often regain their normal appearance, but in prolonged cases the capillary alterations remain and permanent changes in the capillary walls seem to occur. The changes in the capillaries occur coincidently with increase in the blood pressure and it is likely that the capillary constriction is the important factor in elevating blood pressure.

The cause of glomerular nephritis is usually a streptococcus infection. This infection may be anywhere in the body. It is especially likely to be in the tonsils, adenoids, or pharyngeal mucosa; rarely in the nasal accessory sinuses. As the result of the streptococcus infection the capillary system of the entire body, including that of the kidney, is damaged and if the infection remains active irreparable damage may be done, especially to the renal glomeruli. The infection, if chronic, and of low grade, may be insufficient to cause fever. Such infections are not infrequently observed at the roots of the teeth.

In the treatment of these cases the first essential is to find the source of infection and if possible to eradicate it. Operations on the nose and throat during the acute stage of the infection are to be avoided as an exacerbation of the symptoms and occasionally septicemia may occur as the result.

The general care of these patients is of great importance. Further damage to the capillaries must be avoided and no undue strain put upon them. Excessive muscular exercise and chilling of the body surface are especially to be avoided.

As there is definitely impaired renal function with retention of nitrogenous end products, a low protein diet is essential. The protein of milk is the most suitable form of protein. Salt should be restricted, but water should be given in large amounts. The patient should have an occasional "sugar" day, when he receives nothing but 10 gm. of cane sugar per kilo of body weight, dissolved in 1000 to 1500 c.c. of fruit juice. Such a restricted diet often leads to a disappearance of the hematuria and a fall in the non-protein-nitrogen of the blood.

Diuretics are distinctly contraindicated in cases of glomerular nephritis. The administration of alkali to patients with glomerular nephritis not infrequently brings about the symptoms of tetany with convulsions or even definite uremia. Alkalies are, therefore, contraindicated even in the presence of acidosis.

Sweating and purging are of no value in the treatment.

In acute uremia occurring early in the course of nephritis venesection followed by transfusion, or injection of glucose solution is of distinct value.

The two types of nephritis discussed have been considered as separate and distinct diseases but combination forms occur. A patient suffering from nephrosis has a low resistance to infection and is likely to contract a secondary streptococcus infection which will lead to the development of glomerular nephritis on top of the nephrosis.

Again, when the glomeruli of the kidneys are involved there occurs atrophy of the corresponding tubules so that there results a combination of glomerular and tubular changes in the kidney.

If either of the types of nephritis continue for a long period of time a definite inflammatory process with formation of fibrous tissue takes place, the end result being the chronic interstitial nephritis of adult life.

It is doubtful if the conditions discussed bear any direct relationship to the arteriosclerotic kidney of adult life. We know that there may be complete recovery from tubular nephritis or nephrosis provided the casual infection is eliminated. The lesions of glomerular nephritis are more likely to be permanent, but it is not certain that they are progressive provided the infectious cause is eliminated.

The main differences between the two types of nephritis discussed are brought out in the table prepared by Clausen.

Etiology- Infection	Tubular or paren- chymatous Ne- phritis. (Nephrosis.) Staphylococcus especially nasal sinuses.	Glomerular or hemorrhagic nephritis. Streptococcus, es- pecially tonsils and mastoid.
Pathology, Microscopic	General parenchy- matous tissue in- jury. Degeneration of renal tubule cells. No deposits of fibrin.	General capillary injury. Glomerular lesions in kidney. Fibrin deposits.
Edema	Marked	Slight or absent.
Urine	Volume much de- creased. Albumin, large amounts.	Volume normal or moderate decrease. Albumin. Blood.
Blood:		
N. P. N.	Normal.	Increased.
Chlorides	Normal or low.	Increased.
Serum protein	Low	Normal.

Lipemia	Present.	Absent.
Surface tension	Low.	Normal or high.
P.S.P. test	Normal.	Low.
Pressure	Normal.	Increased.
Uremia	Does not occur.	May occur.
Response to high protein diet.	Good.	Symptoms aggravated.
Response to purin diuretics	May be good.	Symptoms aggravated.
Prognosis	Good, if infection can be removed. No permanent damage.	Good in most acute cases. Permanent damage in chronic cases.
Mode of death	Intercurrent in- fection.	Uremia.

### THE RELATION OF THE KIDNEY TO PREGNANCY TOXEMIAS, ESPE- CIALL Y ECLAMPSIA

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The literature of recent years show an increasing tendency to consider the so-called toxemias of pregnancy as etiologically independent of the kidney. Clinical observations, however, show the two intimately associated and although the kidney, whether normal or pathologic, is not primarily a causal factor of pregnancy toxemias proper, yet when toxemia becomes manifest the kidney will be profoundly affected by it.

In considering the kidney at the onset of pregnancy, we have first the kidney that is quite normal. In these cases the kidney can be affected by pregnancy in at least three ways:

1. By additional strain incident to increased metabolism.
2. By toxins, whatever their source, which are developed during pregnancy and are causative of eclampsia.
3. By mechanical factors which interfere with the drainage of the kidney from torsion of the ureter or increased intra-abdominal pressure and dilatation of the ureter and pelvis of the kidney as recently reported by Kretschmer and Heaney.<sup>1</sup>

Changes in the kidney play a more important role in the toxemias of the last trimester than they do in the earlier toxemias of pregnancy. It is in the later months that the signs of kidney involvement bear such a direct relation to the diagnosis of on-coming eclampsia.

Even with perfectly normal kidneys it may be said that there is a certain amount of toxemia manifested in every pregnancy. This pregnancy poison according to the autopsy findings of Mordre<sup>2</sup> produces a glomerular nephritis which may disappear or persist postpartum.

This investigators found that young women previously healthy acquired an acute disease associated with albuminuria and eclampsia without any other known cause in pregnancy.

In the great majority of women the organism takes care of the added strain of pregnancy without symptoms of toxemia or damage to the kidney or toxemia or eclamptic symptomatology. But under some circumstances which are not yet entirely clearly explained pregnancy may result in some damage to the kidney without toxemic symptoms or a toxemia is produced which has as a part of its effect more or less damage to the kidney.

When the kidney is already chronically impaired or when, on account of some pre-existing cause its resistance to strain is decreased, it may be expected that the impairment will be intensified. In addition to this, such a diseased kidney will fail to dispose of pregnancy toxins as a normal kidney might do and result in a condition which cannot be differentiated from an eclampsia. This has been called a nephritic toxemia of pregnancy. Kellogg<sup>3</sup> refers to the fact that many women with chronically impaired kidneys go along very well without manifestations unless they become pregnant. The toxemia of pregnancy in these cases at once makes the kidney insufficiency manifest. Kellogg terms this the recurring toxemia of pregnancy.

It is probable that many such impaired kidneys result from the exanthemata of childhood and that they do not light up until some extraordinary event, such as pregnancy, is present. Such women are sub-standardized for the ordeal of pregnancy. There can be little doubt that here the kidney manifestations are always secondary to the toxemia. I agree with the opinion expressed by Wuth<sup>4</sup> that although there is definite evidence of some impairment of the kidney secretion function during pregnancy, there is no evidence that such kidney impairment is the cause of the toxemia which ends in eclampsia. The kidney impairment, whether primary or intensified, is an effect and not a cause.

It has been pointed out by Harris<sup>5</sup> that there are four distinct varieties or groups of clinical toxemias connected with pregnancy:

1. Nephritic toxemia without convulsions.
2. Nephritic toxemia with convulsions.
3. True pregnancy toxemia evolving to a pre-clamptic state.
4. True pregnancy toxemia with convulsions.

The kidney toxemias are found in women who are handicapped by a more or less severe nephritis and in whom the extra demands of pregnancy may produce a toxemia akin to uremia, with or without convulsions. In the true pregnancy toxemia the symptoms may

come on without pre-existing kidney impairment and the symptoms may disappear after the end of pregnancy. But there is reason to think that the kidney in at least some of these cases will be permanently damaged.

We do not know why some women, either primiparae or multiparae, with impaired kidneys will go through pregnancy without apparent toxemia, while others succumb to uremic or eclamptic primiparae or multiparae, with apparently normal kidneys, develop a pre-eclamptic or a complete eclamptic syndrome, while others do not.

We know something of the relative frequency. Statistics in general show that 6 per cent of pregnancies will develop toxemia. Bünzel<sup>6</sup> finds that 11 per cent of all toxemias of pregnancy are accompanied by convulsions and that they appear in less than 1 per cent of all pregnancies. Cary<sup>7</sup> found one eclampsia in every 200 consecutive pregnancies, primiparae and multiparae being about equally affected. Heinlen<sup>8</sup> in 1,400 labors found 252 cases of eclampsia, 223 of the patients being primiparae. A discussion of the underlying etiological factors connected with the toxemias of pregnancy and the exact origin of them is of little use at this time, but Stroganoff<sup>9</sup>, of Petrograd, thinks that these toxins irritate the central nervous system, especially the vasomotor system, causing spasm of the blood vessels which results in high blood pressure, headache, sensory disturbances, epigastric pain and convulsions. Spasm of the kidney vessels produces the known urinary symptoms.

From the standpoint of the treatment of these cases the observations of Gessner<sup>10</sup>, of Baum<sup>11</sup>, and other German writers are interesting. They noted that the incidence of eclampsia was greatly reduced during the World War when there was a deficiency of fatty and protein food.

I have dwelt thus far on the general aspects of the toxemias of pregnancy, including eclampsia, because there is a widespread erroneous impression that the kidney plays the causal part in these conditions. Kidney manifestations are, therefore, looked for before coming to a diagnosis, although as a matter of fact albuminuria and other kidney symptoms may be late manifestations of the pre-eclamptic state. The diagnosis of threatened eclampsia should be made in most cases before the urine shows the effect of the poison on the kidney.

It is important to regard every pregnant woman as a potential eclamptic simply from the fact of the pregnancy itself. Every pregnant woman should be carefully watched for the appearance of symptoms, not necessarily kidney symptoms, which suggest toxemia and pre-eclampsia. Those pre-eclamptic symptoms, though so well known, will bear repeating here—high blood pressure, headache, eye symp-

toms, epigastric pain, nausea and nervous irritation.

It must be remembered that any one or several of these symptoms may be absent shortly before an eclamptic seizure. The diagnosis must be made upon the presence of one or more of the symptoms or signs, the rate at which they advance, and their severity. If we wait for all of them to appear, or for any of them to become too severe, we may not succeed in preventing an eclamptic attack. Practically every case of eclampsia admitted to Cook County Hospital in the last five years has given a history of premonitory symptoms occurring from a few days to several weeks before admission, which indicated plainly the approach of the convulsions.

The specialist in obstetrics rarely sees an eclampsia among his own patients and when one does occur he believes that the fault lies with himself or perhaps with the patient who has failed to obey orders. If every doctor who undertakes the care of a woman during her pregnancy and confinement felt the same way about his patients, the incidence of eclampsia would be materially decreased.

The high blood pressure is probably the most constant of the signs of the pre-eclamptic state, though we have known of patients who developed convulsions with blood pressures as low as 130. All of them, however, presented other signs of threatened eclampsia so marked that the condition could be diagnosed. A rapidly rising blood pressure is of great significance. A ten or fifteen point rise up to 140 within a short time would indicate greater danger than a blood pressure of 150 which might have slowly risen to this point over a long period of time. Blood pressure observations should start as early as possible in pregnancy in order to obtain a standard for that patient.

Epigastric pain is not so constantly present and usually appears shortly before convulsions.

Headache is an earlier symptom and frequent, though mild headaches in the last trimester should be thoroughly investigated and regarded as signs of toxemia unless proved to be due to some other cause. A severe headache commonly precedes the eclamptic attack.

Eye symptoms from slight dizziness or spots before the eyes to partial or complete blindness are pathognomonic.

Edema in any part of the body except below the knee is an important sign of toxemia.

Nausea which is severe or persistent is present in many of these cases.

Nervous irritation is indicated by sleeplessness, a feeling of unrest is a characteristic symptom and when accompanied by others will often complete the picture.

We have two principal resources in the man-

agement of the pre-eclamptic state—diet and hygiene and termination of the pregnancy. The diet is low in proteins, especially animal proteins. It is the writer's practice to limit this part of the diet in every patient at the first interview, even if very early in pregnancy, regardless of the presence of any symptoms of toxemia. It is believed that most pregnant women do better with meat, fish or fowl, limited to three times a week and having in their diet a greater proportion of starches and sugars. As the pregnancy continues the amount of protein in the diet is further reduced if symptoms of toxemia appear. Daily bowel action is provided for by diet, mineral oil and occasionally cathartics if necessary and the skin kept active by frequent bathing. If, in spite of this prophylactic regime one or more of the symptoms of toxemia or the pre-eclamptic state appear, such as slowly and steadily or rapidly rising blood pressure, or one or more of the other signs or symptoms, the patient is put to bed on a rigid protein-free diet, saline catharsis and increased elimination by the skin provided for. She is under daily or hourly observation and the question of induction of labor is considered as soon as it is found that the progress of the case toward a convulsive attack is not arrested. This question is easy or difficult to decide depending on several factors. First, the severity or rate of progress of the symptoms. Second, the period of the pregnancy. If after the eighth month it may be best to induce labor simply to save the organism and the kidneys, the further damage which a continuation of the pregnancy would entail, and this without danger to the baby. If eclampsia threatens in spite of treatment before viability or near this period, each case must be judged on its merits. Here the decision must be made as to whether the danger that threatens the mother justifies the sacrifice of the baby or whether we may carry the pregnancy to a safer period for the baby without subjecting the mother to the dangers of eclampsia. Our knowledge of the subject is not yet complete enough to enable us to decide accurately in each case of late toxemia which one may be safely allowed to continue with signs and symptoms of threatened eclampsia present and progressive. It occasionally happens that nature decides the question for us, by the inauguration of labor and emptying the uterus.

An important question within the scope of this paper of the permanent effect of pregnancy toxemias on the kidney. Do the kidney lesions caused by pregnancy toxemias persist? A study of these cases in Johns Hopkins Hospital by Harris<sup>16</sup> showed that the great majority of eclamptic mothers examined the year after delivery showed no renal damage, but three out of twenty-seven examined did show such lesion. Fifty-five patients who had clini-

cal pre-eclamptic toxemia were examined one year later and thirty-three showed chronic renal involvement. There were 10 later pregnancies in this group and each case was complicated by nephritic toxemia. Chronic nephritis, but more severe in type, was also present in all patients of the nephritic toxemia group who were examined later. The absence of the signs of nephritis three weeks after delivery in cases of pre-eclamptic toxemia and eclampsia does not, therefore, preclude the possibility of permanent renal damage or that such patients may face future pregnancies without fear of toxic complications.

The kidney bears an important relation to the etiology of eclampsia, but it is not the primary cause of disease.

The underlying cause of eclampsia is some poison originating from the pregnancy itself.

Uremic convulsions, if actual or threatened, cannot be differentiated from eclampsia in pregnancy.

Urinary findings may not appear until shortly before the attack.

The treatment of threatened eclampsia and uremia is the same.

In the present state of our knowledge of the subject we must regard the symptoms of late toxemia as evidence that convulsions will follow if successful treatment is not instituted.

Eclampsia is a preventable disease and a very large part of the responsibility for its prevention lies with the physician to whom the patient goes for care during her pregnancy and confinement.

#### CARDIAC INDEX—A MEANS OF PROGNOSIS IN PULMONARY TUBERCULOSIS\*

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Prognosis in any disease is of extreme importance, for it is with this question that the physician is most often confronted. Therefore, any information that will aid him in arriving at a decision relative to the length of illness, period of convalescence, permanence of recovery, and a span of life should be considered as a valuable addition to the armamentarium of his professional knowledge.

The many phases peculiar to the different diseases make the problem of prognosis a most intricate one, and the conscientious practitioner realizes that before a decision can be made, all factors governing the course of any illness must be considered. Hence, in patients suffering

\*Read before the Michigan Trudeau Society at the Eighteenth Annual Session of the Mississippi Valley Conference on Tuberculosis.

from pulmonary tuberculosis, the clinician must take into account such factors as age, environment, mental state, constitution, character of lesion and the like, before giving a prognosis.

The lamentable paucity of specific and detailed studies on low blood pressure and its relation to various diseases is striking. We know that various diseases are associated with low blood pressure such as: (a) acute infectious diseases i. e. typhoid fever, pneumonia, etc. (b) chronic wasting diseases—tuberculosis, carcinoma, Addison's disease, (c) anemia, both primary and secondary; (d) nervous diseases—general paresis, neurasthenia, Basedow's disease at times; also in intoxications such as alcohol, tobacco and acidosis resulting from diabetes.

A brief review of the literature disclosed the work of Gibson<sup>1</sup> who formulated a blood-pressure, pulse-rate ratio in prognosticating cases with pneumonia. It is claimed that when the blood-pressure expressed in millimeters of mercury remains above the pulse rate expressed in beats per minute, the case has a favorable prognosis and vice versa.

Most clinicians believe that there is a definite relation between the low blood pressure existing in patients suffering from pulmonary tuberculosis and the toxemia present in this disease. With this thought in mind, we decided to make a careful study of blood pressure in tuberculosis. It is no exaggeration to say that our present day classification, meritorious as it is in its applicability to the pathology in tuberculosis, is unreliable, save, the so-called intangible factor of judgment as a means of foretelling with any certainty the outcome of the disease. Considering the fact that tuberculosis occurs in individuals at the time of life most productive economically; and considering the chronicity of the disease, the question arises, how long, if ever, will it be before the patient is sufficiently improved to resume part time work.

The well known fact that we have an almost characteristic low blood pressure<sup>2</sup> with a rapid pulse in this particular disease, lead us to correlate them into a ratio, which is the arithmetical mean<sup>3</sup> of the systolic and diastolic reading divided by the pulse rate per minute. This yielded an interesting and consistent quotient; and in want of a better term, it was the opinion of the authors that this quotient best be designated as the cardiac index.

$$\text{Cardiac Index} = \frac{\text{Systolic} + \text{Diastolic}}{2} \quad \text{S} + \text{D} \\ \text{or} \\ \frac{2}{2} = \text{C.I.} \\ \text{Pulse rate per minute} \quad \text{P.R.}$$

Although the blood-pressure bears no definite relation to the degree of involvement<sup>4</sup> it does, with the degree of toxemia, which is manifested by a fall in pressure and an increase in pulse

rate. This seems to justify our belief that the so-called cardiac index indicates indirectly the amount of toxicity.

The study was first begun January, 1924, and continued for a period of fourteen months, during which time an average of five readings was obtained on 700 patients. The majority were men and a comparatively small number, women. Blood-pressure readings, and chest examinations were made monthly. The initial reading was taken and a quotient computed about two days after admission, using the initial cardiac index alone as the basis of classification.

## The Tycos sphygmomanometer and auscula-

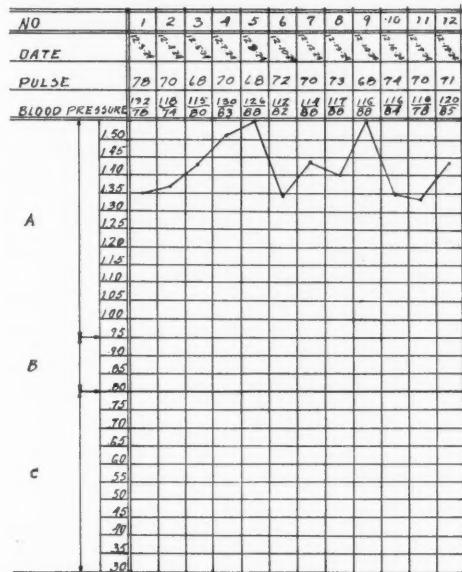


FIGURE 1

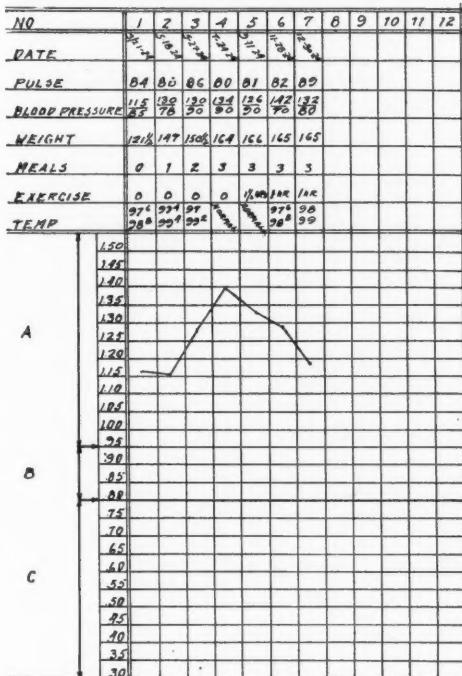


FIGURE 2

tory method were used. Systolic reading was taken in the usual way, and diastolic reading recorded at the fifth phase, i. e., at the point where the sounds were no longer to be heard. The heart rate was always obtained with a stethoscope at the apex and timed for one minute, and all readings were taken by one physician.

Through the courtesy of Dr. G. B. Davis, surgeon of the Illinois Steel Company, a control of pressures on fifty workers was obtained, and the average cardiac index found to be 1.21.

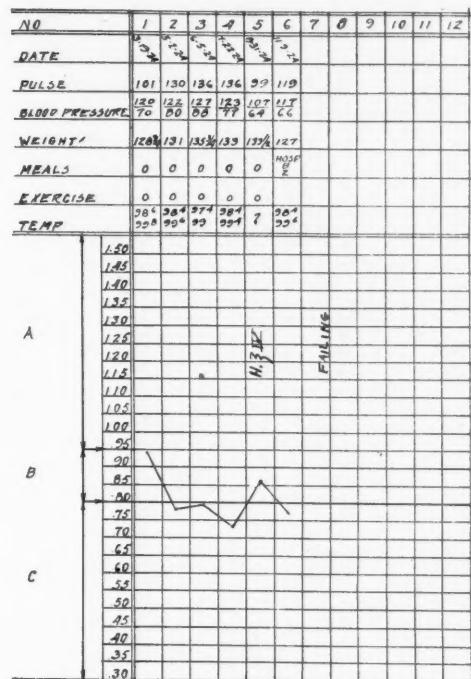


FIGURE 3

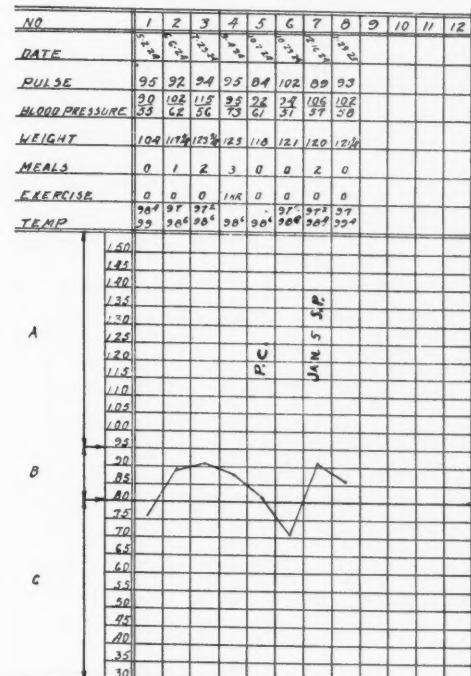


FIGURE 4

Twelve daily consecutive readings were taken of two normal individuals, and a curve plotted to show the normal daily variation (Fig. 1). In order to ascertain the progress of patients who left the institutions, questionnaires were sent out and the results included in this report.

Cases were divided into Class A, B, and C—favorable, doubtful, and unfavorable, respectively. Class A included all having an initial cardiac index from .95 to 1.50 and upward; Class B from .80 to .95; and Class C from .30 to .80 (Fig. 2, 3, 4 and 5) respectively.

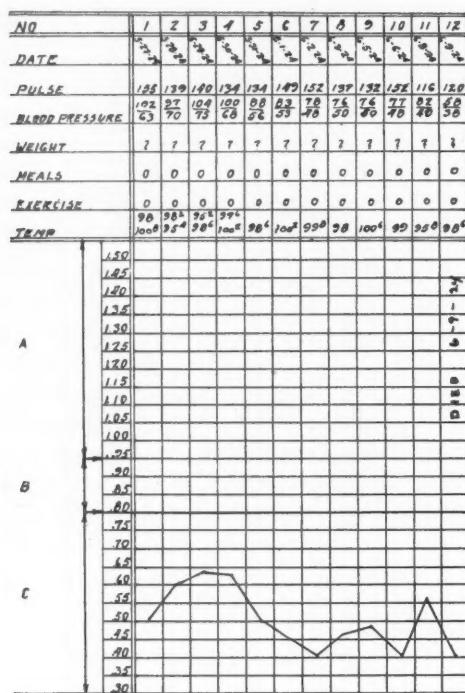


FIGURE 5

Chart I shows 339 patients, or 48.5 per cent of the total of 700 to be in class "A". Of these 264, or 78 per cent improved; 257, or 75.5 per

cent, were ambulatory, i. e., were on one to three meals in the dining room; 81, or 24 per cent, on exercise.

Of the 156, or 22 per cent of the total in Class "B", 78, or 50 per cent, improved; 41, or 26 per cent, failed; 37, or 24 per cent, died; 44, or 28 per cent ambulatory; 19, or 12 per cent, on exercise. It is of interest to note that 50 per cent improved as compared with 26 per cent failed, and 24 per cent died—thus the doubtful class. Of the 205, or 29.5

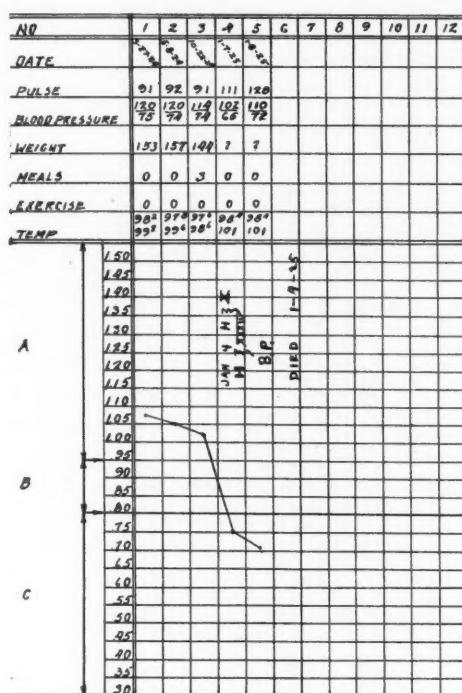


FIGURE 6

per cent of the total who were in Class "C", 36, or 17.5 per cent improved, 48, or 23 per cent failed; 121, or 59.5 per cent died; 21, or

CHART I.

Class of Patients	Total No. Patients	Improved	Failing	Dead	Ambulatory	Exercise	Spon. Pneumo Thorax	Art Pneumo Thorax	Nephritis	Positive Wass.	Non-Clinical	Average Initial Quot.	Average Subsequent Quot.
A.	339	264	39	36	257	81	3	1	27	35	10	1.17	1.11
	48.5%	78%	11.5%	10.5%	75.5%	24%	.9%	.3%	7.9%	10.3%	2.9%		
B.	156	78	41	37	44	19	2	4	6	11	3	0.87	0.93
	22%	50%	26%	24%	28%	12%	1.3%	2.56%	3.8%	7%	2.5%		
C.	205	36	48	121	21	3	21	5	20	9	3	0.66	0.69
	29.5%	17.5%	23%	59.5%	10%	1.5%	10%	2.8%	9.7%	4.3%	1.9%		

10 per cent were ambulatory; 3, or 1.5 per cent were on exercise.

Chart II shows a record of 194 deaths, the number and per cent in each class. The noteworthy findings are the relatively high percentage of hemoptysis, 41.5 per cent; high percentage of cardio-renal disease, 33 1/3 per cent; the percentage of positive Wassermanns, 5.5 per cent, and of meningitis, 2.5 per cent in

Class "A" as compared with hemoptysis, 32 per cent; cardio-renal, 10.5 per cent; positive Wassermanns, 2.5 per cent in Class "C". This, in short, means that in the presence of a favorable cardiac index as is found in Class "A" patients, a guarded prognosis must be made when the patient gives a history of hemoptysis, or where complications such as above mentioned are demonstrable (Fig. 6, 7, 8, 9).

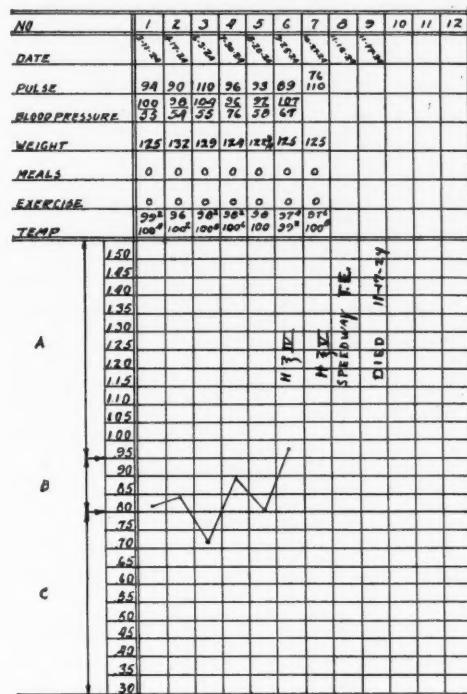


FIGURE 7

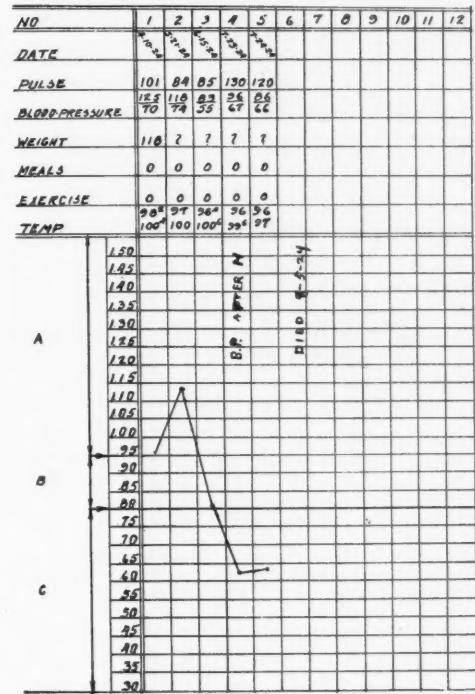


FIGURE 8

CHART II.

Class	Total No. of Deaths	SPUTUM		URINE			Hemoptysis		COMPLICATIONS						Non-Clinical	
		Positive	Negative	Albu-men	Neg-ative	T. B. in Urine	TOTAL		Cardio-renal	Laryn-gitis	Men-ingitis	Spon-Pneu.	Suicid-al	Syph-ilis		
							15—41.5%	Frank Bronch Pneu.								
A.	36	31	5	11	25	3	2	5	12	4	1	3	2	2	0	
	10.5%	86%	14%	30.5%	69.5%	8%	5.5%	14%	33 1/3%	11%	2.5%	8%	5.5%	5.5%	0	
B.	37	34	3	7	30	0	0	0	2	4	1	2	0	2	0	
	24%	92%	8%	19%	81%	0	0	0	5.5%	10.5%	2.5%	5.5%	0	5.5%	0	
C.	121	107	14	21	100	4	3	13	13	7	0	18	1	3	0	
	59.5%	88.5%	11.5%	17.5%	82.5%	3.5%	2.5%	10.5%	10.5%	6%	0	15%	0.8%	2.5%	0	

Chart III. shows by the process of elimination 23 Class "A", or 6.8 per cent non-complicated cases and free from the tendency of

an improvement of 88.86 per cent, while Class "C" 87.4 per cent, showing a tendency to be unfavorable. This striking difference is based

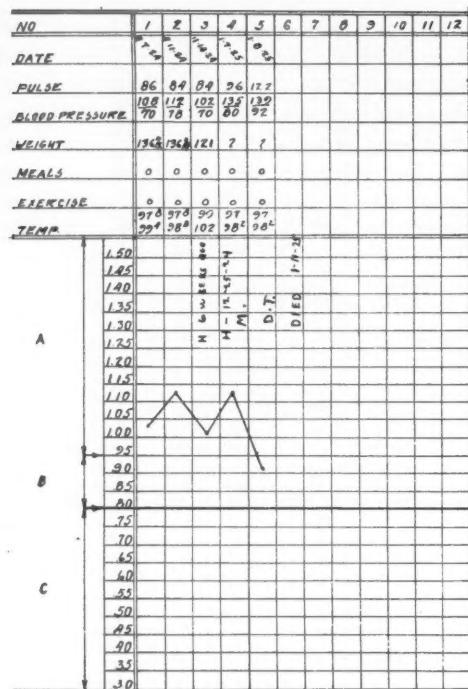


FIGURE 9

hemoptysis to be failing; 15, or 4.34 per cent dead, or a total of 11.14 per cent showing a tendency to be unfavorable. In contrast we were able to show by ruling out our non-clinical as you see in Chart III, that only 10, or 12.6 per cent tuberculous patients of Class "C" improved. In other words, Class "A" shows

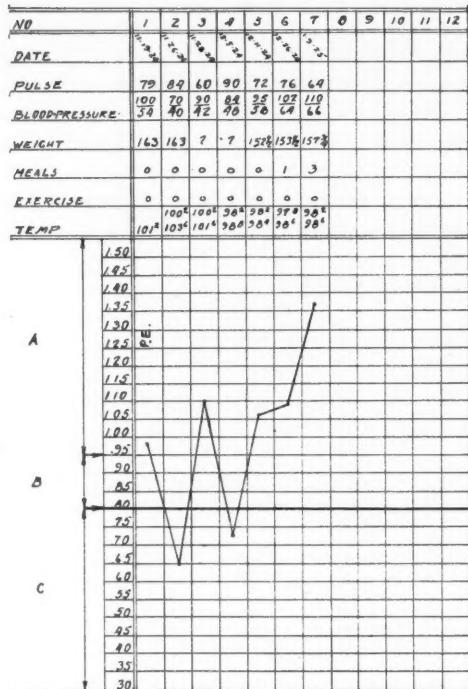


FIGURE 10

on a nine-month average period of observation.

In making this observation we found that in the greater number of cases the initial cardiac index was reliable and that if once in Class "A" there would be a tendency for the total average of the indices to stay in Class "A" re-

CHART III.

CLASS	FAILINGS					DEATHS					
	Total No.	Hemoptysis	Cardio-renal	Positive Wass.	Non-Complicated	Total	Hem. Frank	Hem. Broncho. Pneu.	Cardio-renal	Positive Wass.	Non-Complicated
A.	39	11	4	1	23	36	2	5	12	2	15
	11.5%	3.2%	1.5%		6.8%	10.5%	2.06%		4.1%		4.34%

IMPROVED

	Total	NON-CLINICAL						Art. Pnht.	Positive Wass.	Clinical Improv.
		Un-Resolved Pneu.	Pneumonia	Exoph. Goitre	Herpes Zoster	Diabetes	Alcoholism			
	36	1	1	1	1	1	1	1	3	10
	17.5%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%	1.54%	12.6%

gardless of the normal fluctuation. The same is true of those in Class "C". The exceptions to this are the Class "B" patients, where the

10, 11. These curves correspond closely in an inverse relation to the temperature present.

#### CONCLUSION

1. That the Cardiac index has a definite value as a method of classifying tuberculous patients, is shown by the fact that out of 339 patients in Class "A" (favorable class), 88.86 per cent improved; Class "B" 156 patients (doubtful class), 50 per cent improved, 26 per cent failed and 24 per cent died; Class "C" 205 patients, 23 per cent failed, and 59.5 per cent died.

2. That a monthly computation and plotting of the cardiac index is of value to show the progress of the patient, is the belief of the writers.

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#### EVIDENCE IN FAVOR OF THE MICROBIC ORIGIN OF CARCINOMA\*

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In order to understand the obscurities, mysteries and fantasies which have arisen about the cancer problem, it is necessary to know something of the history and development of pathology and bacteriology. Beginning with Galen, we find from his teachings that the genesis of all tumors is ascribed to the accumulation of a variety of hypothetical tumors. After Galen there followed some fifteen hundred years of darkness and superstition with a general belief that disease was due to the machinations of evil spirits except when it came as a retribution for sin. With the discovery of the circulation of the blood in the seventeenth century, it was natural that tumors should be held to have a sanguineous origin, just as when the lymph was discovered a century later it was inevitable that the inclination would be to find in it the explanation of the formation of new growths. With John Hunter originated the conception that neoplasms have a relationship to normal tissues and arise as a result of some alteration or defect in develop-

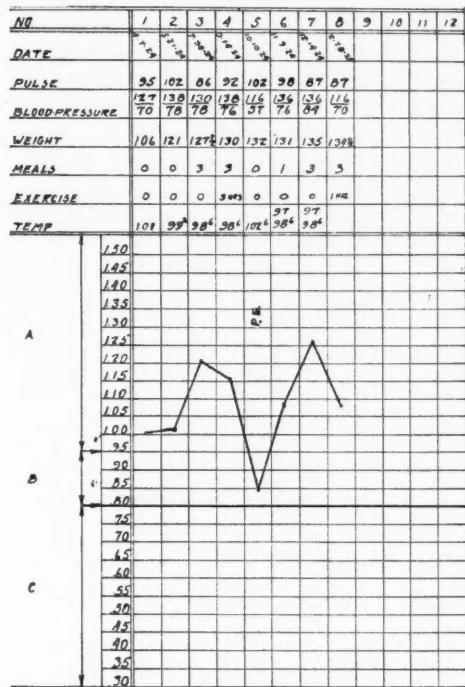


FIGURE 11

cardiac indices are apt to go up to Class "A" with improvement, or down to Class "C" with ultimate death. Aside from the exceptions already made in Class "A" we were able to study the curves of pleurisy with effusion, and to our surprise found those curves to show wide and interesting fluctuation, which are shown in Fig.

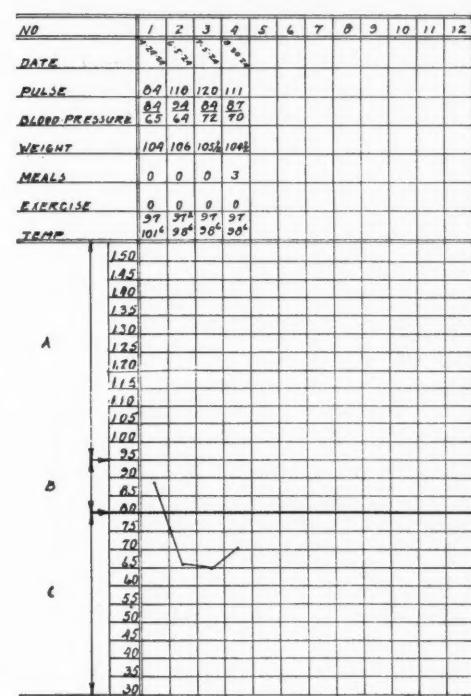


FIGURE 12

\*Read as a part of a symposium on "Cancer" before the Bay County Medical Society, Bay City, Michigan, September 28th, 1925.

ment. Following the advent of the microscope came the famous cell theory, according to which the essential element of every tissue is a cell. This theory was first propounded by Schleiden for plants, and almost immediately applied to the animal kingdom by Schwann. About the same time Muller demonstrated the cellular nature of neoplasms, and taught that all cells, including those of new growths, originate from a formative fluid or blastema exuded from the blood. Remak then established the fact that there is a continuous cellular development from the germ cell and that by differentiation these cells are converted into tissues and organs which are to be considered as a mass of minute cells communicating with each other. In 1858, Virchow appeared on the scene and after discarding the Mullerian doctrine of the blastemal origin of cells, adopted the cell theory in its entirety for neoplasms as well as for normal tissues. His doctrine was formulated in the famous phrase "Omnis cellula e cellula"—"Every cell is derived from a cell."<sup>1</sup> So great was the influence of Virchow's authority that few questioned his teaching that neoplasms consist solely of an abnormal overgrowth of the cells of the person or animal concerned. Under the cell theory of cancer are now included all such explanations as (1) Cohnheim's theory of embryonic cell rests; (2) Ribbert's theory of tissue tension; (3) the theory of chronic irritation and injury; (4) the theory of chemical irritation; (5) the theory of disturbed metabolism; (6) the theory of derangement of internal secretions; and (7) the theory of senile changes.

Somewhere in the seventies or eighties of last century when Pasteur, Lister and others were making such vast strides in the elucidation of microbic diseases, we first begin to hear of micro-organisms in connection with the etiology of cancer. Among the first to make a serious study of the question were Nedopil, Scheuerlen, Soudakewitsch, Pfeiffer, Sjoberg, Thoma, Ruffer, Galloway, Eberth, Korotneff, Ballance, and Shattock. Somewhat later investigators were Plimmer, Cattle, Clarke, SanFelice, Roncali, Foa, Russell, Montsarrat, Gaylord, Ford Robertson and Doyen. Many of these writers considered that they had discovered the cause in a bacillus, coccus, protozoon, or yeast, but their contentions were vigorously opposed and afterwards submerged. The idea, however, that cancer is a parasitic disease has never been frustrated, and lately much evidence has accumulated to combat the authority of the cellular neoplastic pathogeny.

It is admitted by all that if a specific micro-organism conforming to all rigid laboratory tests can be demonstrated in association with every case of carcinoma the chief objection of the opponents of the extrinsic origin of cancer will have been overcome, and the long-contin-

ued struggle between the adherents to the cell theory, who now hold that a cancer cell is a cell which has got beyond the physiological control of the body, and the adherents of the germ theory, who advocate that the cancer cell is an abnormal cell due to the presence of an extrinsic organism within that cell, will be at an end.

#### CLINICAL EVIDENCE IN FAVOR OF THE EXTRINSIC ORIGIN OF CANCER

Although, as stated above, the incontrovertible proof of the microbic origin of carcinoma is the repeated demonstration by a number of observers of a specific micro-organism answering the law of Koch, it will not be amiss to enumerate an assemblage of facts which very strongly support the germ hypothesis.

1. *Local Origin.* It is now generally agreed that cancer begins locally. This mode of origin is similar to that of admitted infections such as tuberculosis, syphilis and anthrax. The fact that cancer is often preceded by chronic irritation in no way lessens the value of the analogy, as the irritation should be considered as a predisposing agent in lowering the resistance of the epithelial tissues and preparing them for the reception of the invading micro-organism.

2. *Lymphatic Spread.* At first cancer cells multiply locally and invade the surrounding tissues; they then are carried by the lymphatics and the blood-stream from this primary focus and form secondary growths which are structurally identical with the primary. Lymphatic spread is the usual mode of travel for most infections, the chief difference between these and carcinoma is that in the latter the infection is conveyed as a microparasite within an epithelial cell.

3. *Clinical Similarity Between Carcinoma and Infective Diseases.* It has been the experience of almost every clinician to have met with cases in which the local lesion and the general clinical appearance of carcinoma, tuberculosis and syphilis were so similar to one another that a positive diagnosis without the aid of laboratory tests was impossible.

4. *Latency.* No explanation other than that of the microbic doctrine can explain the latency and variations in the rate of growth at different periods in the course of the neoplastic diseases. We have all seen cases of carcinoma in which a remission of the symptoms and signs has been followed by a period of re-crudescence in the same manner as in patients suffering from syphilis or tuberculosis.

5. *Human Contagion.* Countless examples might be cited to show that cancer is a communicable disease. Opponents of the microbic doctrine explain all such occurrences by saying that they are no more common than might be expected in such a prevalent disease; and, moreover, that the cases in which inoculation

of cancer has been fully demonstrated to have taken place are to be considered as incidences of mere transplantations of cancerous tissue. The first statement of such an argument is counteracted by recalling the fact that it is identical with the argument advanced against the contagiousness of tuberculosis not more than thirty-five years ago; and the second part of the argument is shown below to have no material weight—even if such occurrences are considered as transplants—in view of the evidence adduced that cancer can be produced by inoculations of a micro-organism isolated from cancerous tissues.

6. *Selective Action for Epithelial Tissue.* This is in keeping with many microbial diseases whose causal organisms exhibit selective action for limited areas of various tissues. Witness the preference of pneumococci for lung tissue, typhoid bacilli for lymphoid tissue, rabies for nerve tissue, and meningococci for the meninges; and yet while these and other organisms are selective for certain tissues, they never infect all of that particular type of tissue present in their host, but only a more or less limited area of such tissue. Bland Sutton expresses this phenomenon in the following words, "As the living things in a brook thrive best in certain haunts, so the vegetable and animal forms infesting animal bodies exhibit a marked preference for certain organs and tissues."<sup>2</sup>

7. *Infection Occurs at Site of Lowered Resistance.* Just as the invasion of organisms causing most of the infectious diseases is successful owing to the presence of conditions which have lowered the local resistance of the tissues assailed, so, too, does infection with the carcinoma organism occur at sites where the resistance of the epithelial cells has been lessened by some form of chronic irritation. Research work has been carried out to determine the relationship between chronic irritation and malignant epithelial growths and it has demonstrated that the resistance of the epithelial cells must be lowered before they can be successfully invaded by the carcinoma organism; in other words, it has been found that the carcinoma organism cannot successfully invade a healthy normal epithelial cell. This fact is clearly expressed by Brand, thus, "It (irritation) prepares the soil most admirably for the reception of the causal agent, just as irritation of the soil by ploughing, harrowing, etc., prepares the land for the reception of the seed; but if wheat, for example, is not sown, there will be no crop however thorough the preparation has been. So with cancer, unless the causal agent is present, there will be no disease however great the irritation."<sup>3</sup>

8. *Specific Symptoms.* Like infectious diseases cancer is associated with special signs and symptoms such as tumor mass, pigmenta-

tion of the skin, general weakness, loss of weight, mental dullness, and a peculiar characteristic odor.

9. *Variation in the Virulence of Cancer Cells.* In the case of mice, it has been shown that carcinoma cells may be increased in virulence by passing them through other mice. This is in keeping with the behaviour of pathogenic micro-organisms and indicates the presence of intracellular micro-parasites.

10. *Geographical Distribution.* The unequal distribution of cancer, both general and local, is a strong indication of its microbial origin. Corresponding variations are characteristic of most infectious diseases and form a striking analogy.

11. *Closely Allied Diseases.* (a) Hodgkin's disease is considered as an infection by most pathologists whilst lymphosarcoma is still classed as a neoplasm. Cases not infrequently occur in which it is impossible to determine either by ante or postmortem examination whether the condition is one of Hodgkin's disease or of lymphosarcoma. Other cases begin definitely as Hodgkin's disease and end as lymphosarcoma. The only explanation of such facts is the assumption of an infective agent, and, if such is admitted, then carcinoma must likewise be due to infection.

(b) Dr. Rous has shown by his researches that chicken sarcoma is due to a filterable virus; it has always seemed to us that this virus must be an organism. It is the opinion of all those who have done much work with this tumor that it is a true sarcoma as it has all the characteristics of and fully answers every condition requisite to malignant growths. It is therefore only reasonable and logical to assume that if Rous' chicken sarcoma is caused by an organism, other malignant tumors are caused by an organism.<sup>4</sup>

(c) The venereal sarcoma of dogs is a well known infective neoplasm. It is transmitted during coitus from the male to the female or vice versa in the same manner as syphilis in human beings. Such evidence is, of course, strongly suggestive of a micro-organismal cause.

(d) Erwin F. Smith has isolated from crowngall a bacillus which he has named "Bacillus tumefaciens." With inoculations of pure cultures of this bacillus Smith was able to produce tumors in plants which exhibited many of the characteristics of cancer in man and which caused him to point out and to call attention to the probable relationship between crowngall in plants and malignant epithelial tumors in man. Smith's work is a weighty argument in favor of an extrinsic cause for all malignant tumors and disposes of an argument of the opponents of the microbial theory who have been accustomed to point to the close analogy between plant and animal tumors.<sup>5</sup>

*Laboratory Evidence in Proof of the Extrinsic Origin of Cancer.* With the exception of a few isolated workers, the parasitic nature of cancer has received little attention during the past fifteen or twenty years. The reason for such neglect appears to be that those in charge of the great cancer research institutions have decided that cancer is not a germ disease. It was, perhaps, the failure of the cancer research institutions to solve the cancer enigma that prompted Professor Noel Paton to make the statement that "The discovery of the cause might come from some small laboratory, as many discoveries have come in this way."<sup>6</sup>

Within quite recent years a few workers have made such tremendous strides in the investigation of the bacteriology of cancer that it is our conviction that any impartial person who seriously studies the results of this work will inevitably be forced to the conclusion that the specific origin of cancer has, indeed, ultimately been found.

We shall now review in some detail the recent laboratory work which points to a micro-organism as the essential etiologic factor in malignant growths.

1. The Work of Glover—As we have been especially fortunate in observing and repeating the work of Dr. Glover, we feel that we are justified in discussing it at greater length than the work of any of the others described below. In June, 1920, Dr. T. J. Glover, serologist and clinical pathologist to our hospital, where he had been conducting experimental and research work on carcinoma for some time, demonstrated a number of living and dead experimental animals in which he had been able to produce primary and secondary malignant epithelial growths. The animals included dogs, guinea pigs, mice, rabbits, and rats.

At the same time several hopeless clinical cases of far advanced carcinoma were exhibited to show the specific effect of a weak antitoxin which originated as the result of repeated injections into horses of a toxin obtained from cultures of a micro-organism which had been isolated from human carcinomatous tissues.

As a consequence of the newspaper publicity which followed Dr. Glover's demonstrations, requests for treatment were received from many places. A clinic under our direction was opened at St. Michael's Hospital, but at Dr. Glover's request it was closed in August, 1920, for the reason that it grew so large that the supply of antitoxin was quite inadequate to meet the demand. At that time Dr. Glover stated that his antitoxin was of very low potency, that the proper dosage was not known, that further study on absorption of the broken-down cancerous tissue should be made and more animal experimentation done before proceeding further. The conclusions to be drawn from our clinical experience with this weak antitoxin at that time may be summarized as follows: (a) The majority of the cases sooner or later died, but practically all had previously undergone one or more forms of treatment such as surgical, X-ray, and radium. They were in the last stages of the disease and considered hopeless by their physicians and surgeons. Furthermore, many of the cases were suffering from other well advanced degenerative diseases such as nephritis, arteriosclerosis and

cardiac lesions. (b) Most of the cases showed marked diminution of pain, softening and regression of the growth, lessening of discharges, improvement in mentality and a general amelioration of other symptoms. (c) In only a few cases were we permitted to make postmortem examinations, but in nearly all of these the growths showed signs of regression with microscopic degeneration of the cancer cells. (d) A number of cases, which at that time were duly proven to be carcinomatous, are still living and free from all symptoms and signs though they have received no treatment for the past five years.

After the closure of the clinic at St. Michael's Hospital, we were closely in touch with the clinical side of Dr. Glover's work until October, 1920. For the following three years, during which period Dr. Glover spent most of his time in furthering the scientific side of his investigations in his New York laboratory, we took no active part in any phase of the work. In November, 1923, we received an invitation to visit New York, and at that time were permitted to examine living and dead experimental animals exhibiting growths which had all the characteristics of carcinomata. Amongst these animals were represented apes, baboons, macacus rhesus and Java monkeys, and lemurs, in addition to those species mentioned as having been shown in Toronto in 1920. We also studied under the microscope sections of animal tissue from both primary and secondary growths, all of which appeared to show the atypical epithelial proliferation which characterizes carcinomatous growths. A little later we studied the micro-organism which Dr. Glover believed to be the cause of carcinoma, and isolated it from blood and tissue of carcinomatous cases which were under our own care.

In the autumn of 1924, we began to repeat Dr. Glover's work in our laboratory in Toronto, and have since published accounts of some of our work which we shall now summarize.<sup>7 1 1</sup>

Following the method of Glover, strictly avoiding the employment of all cancerous tissue showing any evidence of necrosis or ulceration, and using rigid aseptic precautions and proper controls throughout the work, we have been able to isolate an identical micro-organism from every type of carcinoma with which we worked. This micro-organism not only exists within the cancer cells, but is present as a bacteraemia in the blood of cancerous patients. Its life history is decidedly peculiar and consists of three separate and distinct stages, viz.: (1) bacillus, (2) coccus, and (3) spore-sac. Each of these individual stages can be grown in pure culture, but an alteration in the composition or the reaction of the culture medium or its environment may cause one stage to pass into another in the above order or the reverse. An intermediate phase between the bacillus and coccus stages is the so-called spore phase in which the micro-organism assumes an ovoid form. As far as we have been able to observe,

the complete chain in the complex life history of this pleomorphic micro-organism is represented by bacillus, spore, coccus, and spore-sac.

In addition to the metamorphosis from stage to stage, variations of a lesser degree occur in each individual stage. For example, spore-sacs exhibit variations in size and shape, and may or may not be associated with hyphae. Coccii are spherical and comparatively small when passing to or from the spore-sacs, but are ovoid and larger (the so-called spores) when giving rise to bacilli. Bacilli are small and thin when young, but become longer and thicker when older and containing spores.

A striking feature of the life-cycle of the Glover micro-organism is that it is filterable in at least one of its phases. This test is carried out in two ways, as follows:

(1) A fluid culture of actively growing micro-organisms in either the bacillus or the coccus stage is first passed through a sterile Buchner filter, in which pressed sterile pulp one-half inch in thickness has been placed, to rid it of all the larger solid particles. The filtrate is then passed under pressure through a sterile W Berkefeld filter which has been previously tested against unfilterable organisms. A portion of the second filtrate is then poured over the solid medium and incubated at 37°C. Within forty-eight hours pure cultures of bacilli or cocci which show all the characteristics of the Glover micro-organism are found to be present. Controls are invariably negative.

(2) A piece of fresh carcinomatous tissue is taken and divided under sterile conditions into two parts. One of these portions is placed on solid medium and incubated at 37°C. The other portion is minced with sterile sharp scissors and thoroughly ground with sterile sand in a sterile agate or porcelain mortar in order to break up the cells; sterile Ringer's solution is then added until the mass is well diluted and all is then thoroughly mixed. The suspension is next filtered and allowed to gravitate through layers of pressed sterile pulp to remove the sand and crushed tumor cells. This filtrate is then passed under pressure through a sterile W. Berkefeld filter which has previously been tested against unfilterable organisms. The second filtrate is placed on solid media and incubated at 37°C. After one to three days a pure culture which is identical with the culture obtained from the corresponding portion of the same tissue is found. This shows all of the characteristics of the Glover micro-organism.

Gelatin, after being inoculated with stab cultures of the micro-organism, is completely liquified in from three to five days at room temperature. All sugars of a series with which we worked, excepting granatose, are fermented within two days at 37°C. The amount of fermentation and the increase in acidity of the

sugar broth, and the degree of liquification of gelatin depend, however, upon the virulence of the culture; where the organism is attenuated by keeping it for some time under conditions unfavorable to its growth it loses more or less of these specific properties varying directly with the degree of attenuation. With Russell's double sugar agar medium the pale yellow color is changed to a deep rose pink and the gas which accumulates in the butt end of the tube raises the medium quite markedly in from one to two days at 37°C. The controls in all our experiments were invariably unchanged.

When the organism is grown in a fluid medium the acidity of the medium is at first increased due to the splitting of the sugar present in the medium; after all the sugar has been used and as the production of the toxin reaches its maximum the reaction of the medium becomes alkaline. We believe that the action of the organism on the sugar in the fluid medium is similar to that which occurs in the tissues when the organism invades an epithelial cell, i. e., it acts on the cell sugars, splitting them and causing an excess of acid and at the same time liberating weak toxins. It is to these complex chemical substances or toxins that we must attribute the abnormal cell proliferation in carcinoma.

In the agglutination test the serum employed is from horses immunized against human carcinoma cultures by repeated injections of human strains of the Glover micro-organism over a given length of time. The antigen used is a definite dilution of the same micro-organism as employed for the immunization of the horse against carcinoma. Complete agglutination of the carcinoma antigen takes place up to 1 in 30,000 dilution. None of the others of a large series of pathogenic and non-pathogenic antigens are agglutinated with the exception of the colon antigen, which agglutinates up to 1 in 25 dilution.

In the precipitin test 1 c.c. of an organism-free old standard toxin—which is the killing dose for a full-grown white mouse—is used against certain dilutions of the Glover antitoxin. The human carcinoma antitoxin is found to precipitate the toxin up to 1 in 30 dilution, while various samples of fresh normal horse sera do not precipitate the toxin.

The staining properties of the micro-organism present nothing unusual. It takes most of the ordinary stains and is gram positive. The bacillus, spore and coccus stages show a much greater affinity for stains than the spore-sac stage.

In the course of our work we have carried out experiments and made observations with the use of a number of media other than those supplied by Dr. Glover. These media included nutrient gelatin, beer wort sugar agar, peptone agar, fresh beef heart hormone agar, and

hormone broth, all of which were prepared so as to have a pH. ranging between 7.2 and 7.4. In a number of instances during our work with these media a cultural growth of the Glover micro-organism was obtained from the blood and tissues of cancerous patients as well as from cultures which had been transferred from the Glover medium. We observed that on most of these media the organism persisted in the coccus stage, occurring singly, in pairs, and chains of three or more simulating the appearance of a streptococcus. The assumption of the streptococcal form is apparently due to division of the cocci. All these forms of cocci could be induced to pass into the bacillus stage by subculturing on the Glover medium. In our opinion, the tendency of this micro-organism to appear as cocci on other media is the reason why some observers have been able to isolate it only in the form of micrococci, and upon which findings they base their arguments that the cancer organism is a micrococcus rather than the pleomorphic micro-organism which it is and which we have demonstrated it to be. Other striking differences noted in the use of these media is the scantiness of growth as compared to the luxuriant development which takes place on the Glover medium, and also the tendency of this scant growth to diminish in the course of a few days.

For the work done on immunity and for a description of the production of carcinomata in monkeys by inoculation of the Glover micro-organism, you are referred to the work of Dr. M. J. Scott.<sup>8, 1, 4</sup>. Scott was able to produce malignant epithelial growths with distant metastases in a large percentage of the animals that survived the initial toxic effects of the injections and escaped death from intercurrent diseases. No mechanical or chemical irritation other than sublethal doses of the carcinoma toxin was used and all control animals were free from growths.

2. The Work of Young—Although Young's publications in the Edinburgh Medical Journal date back for some years our first knowledge of his work was in January, 1925, when an address by him appeared in the British Medical Journal<sup>9</sup>. The description of Young's carcinoma organism corresponds very closely to that of Glover's as will be evident from his words, "I have shown that the microbe has a complex morphology, appearing in a variety of forms, each of familiar type and each capable of leading an independent life: hypha, yeast, coccus and bacillus." In addition to the above form, Young deduces the presence of a totipotential plasm or amorphous phase. This amorphous phase, Young believes to be an essential link in the chain of the morphology of the cancer micro-organism.

3. The Work of Nuzum—In 1921, Nuzum reported the isolation of a filterable micro-organism from mouse cancer<sup>10</sup>. In a later paper an account of the isolation of the same micro-organism from human breast cancer is given<sup>10</sup>. In the latter paper an account is given of the production of metastasizing carcinoma in the breast of the dog

and primary epithelioma in man by repeated inoculations of this organism. After a careful consideration of Nuzum's writing it appears probable that his micrococcus is an identical organism with the coccus phase of the organism of Glover and of Young, since in our work we have frequently isolated from cancerous growths and from the blood of cancerous patients micrococci which could be induced to pass into other forms after transferring to other media. It would, indeed, be an interesting experiment to attempt to show a plermorphism in Nuzum's micrococcus paralleling that in Glover's and in Young's.

4. The Work of Lumsden—Dr. Lumsden, of the Lister Institute, London, has shown experimentally that cancer cells differ materially from embryonic and normal epithelial cells<sup>11</sup>. In this work Lumsden employed normal rat serum as well as antiserum obtained from rats which had previously been immunized against mouse cancer through initial subcutaneous inoculation and subsequent repeated intraperitoneal injections of emulsions of mouse carcinoma tumors over definite periods of time. In his experiments Lumsden clearly demonstrated that when embryonic tissue, various normal epithelial tissues and mouse carcinoma cells were cultured in normal rat serum they all continued to grow vigorously and that the mouse cancer cells showed active migration; while when similar embryonic tissue, similar various normal epithelial tissues and similar mouse carcinoma cells were cultured in the cancer antiserum obtained from immunized rats the embryonic tissue and the various normal epithelial tissues continued to grow vigorously, whereas the mouse cancer cells were killed within twenty-four hours.

Simultaneously with these experiments with mouse cancer cells Lumsden carried out similar experiments with rat cancer cells in which he employed normal rabbit serum and an antiserum obtained from rabbits which had previously been immunized against rat carcinoma tumors following the method given above. In all of these experiments Lumsden found that the effects of the anti-rat-carcinoma serum on rat carcinoma cells fully coincided with the results obtained in the use of mouse-carcinoma cells in the foregoing experiments.

5. The Work of Warburg—Dr. Otto Warburg of Berlin has demonstrated experimentally that a cancer cell is physically and chemically unlike a normal cell, and has shown that when carcinoma tissue is grown in the presence of grape sugar it behaves like a yeast<sup>12</sup>. He found that when rat carcinoma tissue is grown anaerobically in the presence of grape sugar the tumor tissue, by glycolysis, produces its own weight of lactic acid every eight hours; when this tumor tissue is then grown aerobically the glycolysis is reduced, but does not disappear. Normal animal tissues when grown anaerobically produce an excess of acid which they are able to destroy under aerobic conditions, while cancer cells cannot do this. Embryonic tissues, when grown under aerobic conditions in the presence of grape sugar form no lactic acid, while human carcinoma tissue, when grown anaerobically in the presence of grape sugar, produces about sixteen per cent of its own weight of lactic acid each hour.

6. The Work of Fischer—Dr. A. Fischer, of Copenhagen, has been able to grow the cells of the Rous chicken sarcoma in serum from chicks to which has been added fresh embryo juice<sup>13</sup>. With inoculations of this culture he has produced sarcoma in chickens. Fischer has observed that when a piece of muscle is added to this serum the sar-

coma cells invade the muscle and destroy it; normal cells do not do this.

7. The Work of Gye and Barnard—In the London *Lancet* for July 18th, 1925, Dr. W. E. Gye and Mr. J. E. Barnard published papers demonstrating the presence of a living micro-organism in cultures obtained from the filtrates of neoplastic tissues<sup>14,1</sup>.

Mr. Barnard's article deals with photographing the ultra-microscopic micro-organisms cultured by Gye from neoplasms. Barnard employs a highly specialized and complex apparatus, and is able to show by dark-ground illumination and ultra-violet microphotography the presence of colonies of "spheroidal bodies" from the sides of which buds or "particulate bodies" develop. We believe that these ultra-microscopic bodies of Gye and Barnard are filterable phases in the complex life history of the micro-organisms of sarcoma and carcinoma.

In reviewing Gye's paper we shall mention only his most important deduction. On reading the paper, one is first struck with the ingenious manner in which he has come to the important conclusion that to produce a growth two factors are necessary, viz:—(1) a micro-organism which is common to all varieties of malignant growths, and (2) a chemical substance or "specific factor" which varies for each species of animal. As stated above the micro-organisms were seen and photographed by Barnard, so that their presence has been established. The existence of the "specific factor" is a plausible hypothesis, but we believe that the method employed by Gye to prove the existence of the "specific factor" is open to criticism. Our reasons for making this statement will be given in another paper when we have had more time to repeat and extend our experiments.

8. The Work of Rath—The *Zeitschrift fur Angewandte Chemie* of July 23rd last, published a communication from Dr. Rath, in which he reports the isolation of a similar micro-organism from human and animal carcinomata<sup>15</sup>. His work covers experiments with various types of carcinoma; strict aseptic precautions were followed throughout the work, and Rath states that the fact that the micro-organism originated from within the tumors cannot be questioned. The organism was cultivated on agar and on bouillon from carcinomatous tissues of the breast, face, skin, uterus and liver after the tissues had undergone a definite chemical process. The presumable effect of this process is the removal of investing membranes or coverings enveloping the micro-organism and thus allowing its experimental cultivation. From the same tissues no micro-organism could be cultured previous to the exposure to this definite chemical process. Several days old pure cultures of the micro-organism show short, spore-forming bacilli which were observed to be subject to morphologic changes while growing thus in pure cultures. Substances having the odor of lower fatty acids developed during the growth of the micro-organism. Based on the fact that he produced many neoplasms of a carcinomatous character in various animals by the inoculation of pure cultures of this organism, Rath believes that he is justified in concluding that this micro-organism is the etiologic factor in carcinoma rather than that it takes the minor role of any associated phenomenon in the production of carcinoma.

#### CONCLUSIONS

1. Carcinoma is a specific infectious disease due to a pleomorphic micro-organism iso-

lated by Glover and by Young. The work of Glover has been repeated and confirmed by Dr. M. J. Scott and ourselves.

2. The Glover micro-organism is a filter-passenger in at least one stage of its life-cycle.

3. The micrococcus of Nuzum appears to be a phase in the life history of the organism of Glover and of Young.

4. Lumsden has shown that an effective antiserum specific for various cancer cells in vitro and for rat sarcoma in vivo is obtained from animals of a different species after they have been immunized against the tumor by repeated inoculations of the cancerous cells.

5. Warburg has cultured human and rat carcinoma tissues and has shown that they differ strikingly from normal tissues.

6. Fischer has cultured Rous chicken sarcoma cells and has shown that they differ essentially from normal cells.

7. The spheroidal and particulate bodies demonstrated in sarcomatous filtrates by Barnard and Gye we believe to be the filterable phase in the life history of the micro-organism responsible for the production of sarcoma.

8. Rath has isolated a similar micro-organism from human and from animal carcinomatous tissues which shows morphological changes when grown in pure culture.

9. The clinical work of Glover and his associates shows that a therapeutic antitoxin of great value in incipient and in post-operative cases has been produced.

10. The future treatment of cancer and other malignant growths will be a prophylactic inoculation of a diluted toxin in a manner already employed by Glover in animals and in humans.

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### A CASE OF AMAUROTIC IDIOCY (JUVENILE FORM)\*

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The juvenile form of amaurotic family idiocy is an uncommon disease and since this case has an interesting family history, it is added to the literature.

Thomas<sup>1</sup> describing this type, says: "Pelizaeus has described a condition coming on in older children, which somewhat closely resembles amaurotic family idiocy; it has also been described pathologically by Merzbacher. The disease has been called aplasia axialis extra-corticalis congenita, is rarer than the amaurotic idiocy, and generally appears at about three years of age. The children live longer than in the form just described (infantile form), and may attain adult life. They are optic atrophy and blindness, but no red spot in the macula develops. There is also a progressive spastic cerebral paralysis, which is diplegic in distribution. These cases show a widespread change, chiefly of the axis-cylinders, and are thought to be due to a congenital defect of formation or agenesis of the axis cylinders, especially of the long extra cortical association fibres, while the familial or Sachs type is rather a primary cellular degenerative process. Nystagmus and tremor are frequently symptoms in the Pelizaeus type; they are not in the familial type." Vogt<sup>2</sup> and Spielmeyer<sup>2</sup> also described this type several years ago. K. Schaffer<sup>3</sup> concluded that in the infantile form a primitive ape-like cyto-architecture of the cerebral cortex exists.

#### CASE REPORT

The patient, a boy, aged 3½ years, was the youngest of four children. His parents were born in Roumania of Jewish extraction and have been in the United States 15 years. The cost this family has been to the community is shown by the fact

\*From the Out-Patient Medical Department of Harper Hospital.

that while in New York they were known to the United Hebrew Charities, and during the time they lived in Detroit, they have been known to the United Jewish Charities, the Department of Public Welfare, Harper Hospital, the Legal Aid Bureau, Children's Hospital, Department of Public Health, North End Community Clinic, and the Wayne County Psychopathic Clinic. Since 1913, the United Jewish Charities have contributed \$500, and the Department of Public Welfare of the City of Detroit have contributed \$990. In addition to the relief given, they have received free medical care from Receiving, Herman Kiefer, Harper, St. Marys, and Children's Hospitals, and the Department of Health.

The father and mother were referred to the Wayne County Psychopathic Clinic in April, 1917. The report of Dr. A. Jacoby, the Psychiatrist, in regard to the father was, that he, "showed marked simplicity of thought and judgment and his general reaction leads to the opinion that he is feeble-minded. He offered enumerable somatic complaints of hypochondriacal nature. The prognosis is very bad and we suggest that he be committed to an institution permanently." In regard to the mother, Dr. Jacoby reported that she was feeble minded and that "the condition is further complicated by the possibility of an induced psychosis." He also recommended her for commitment.

On March 17, 1925, the oldest boy was examined because of the known mental condition of his parents. He was in the A8 grade and there received an International Atlas and Dictionary as the champion speller of the school for 1925. He likewise became the District champion. His examination showed a "chronological" age of 14 years and 7 months, mental age of 9 years and 2 months. Intelligence quotient 63; memory poor, comprehension fair, attention fair, and association good. No marked psychiatric abnormality noticeable." His excellent ability as a speller brings up interesting points in regard to the effect of familial psychosis to precociousness in a single phase of endeavor. The second child, a girl, had a chronological age of 12 years and 8 months; mental age 9 years and 8 months: intelligence quotient 76. The third child, a boy, aged 6 years, showed an evident mental subnormality (Mental hygiene Dept.) The fourth child was the patient. Birth had been normal. At about six months of age the mother noticed that his eyes were moving constantly. Nothing was done about it until March, 1925, when he was brought to the Out-Patient Eye Department, and later referred to the Medical Department. Physical examination revealed an undersized, poorly nourished boy; weight 31 pounds, height 36½ inches; skull circumference 19½ inches. The outstanding features were the small stature, the microcephalic head, the spastic jerking of his head resembling somewhat choreiform movements. There was a marked spontaneous horizontal nystagmus, when apparently looking straight ahead. Strabismus was quite marked. The eye report (Dr. G. Frothingham) is as follows:— Both irises are absent. There is congenital horizontal nystagmus and defective vision. Ophthalmoscopic examination shows discs smaller and whiter than usual. Veins seem somewhat tortuous. Blurring extending from the edges of discs." The nose was full of muco-purulent discharge. The teeth were slightly notched. A high arched palate was present. Tonsils were very large and the cervical glands were enlarged. Thyroid not palpable. Lungs negative. Heart, a soft pulmonic systolic murmur present. Abdomen somewhat "pot bellied" otherwise negative. Gen-

itals normal for size. Epitrochlears negative. With the exception of sluggish patellar reflexes no other change in reflexes was found. From a mental standpoint the boy was markedly subnormal. His facies was that of a feeble-minded child. He presented a pathetic looking picture with his small stature, microcephalic head, nystagmus, absent irises and open mouth. Co-operation was poor. During several examinations he never once uttered an intelligent word, but whined a great deal. His photograph will convey more than any description of his appearance I could give.

#### LABORATORY REPORTS

Blood Wassermann negative; urine negative. Blood count—red blood cells 4,490,000—white blood cells 3,900. Hemoglobin 85 per cent. Polymorphonuclears 24 per cent; lymphocytes 72 per cent; eosinophiles 4 per cent.

#### X-RAY REPORT

"Plates of the head show evidence of either increased intracranial pressure or old rickets. The sella is small in the anteroposterior diameter, but has normal depth. A plate of the chest is negative for evidence of thymus enlargement." Dr. Wm. A. Evans.

#### COMMENT

A case of amaurotic family idiocy of the juvenile type is reported in which both parents were feeble-minded and their four children were mentally subnormal. The oldest child showed a precociousness in spelling, while the youngest child was an idiot of the juvenile amaurotic type. These facts would seem to be an effective argument for sterilization of the feeble-minded.

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### PRE-OPERATIVE TREATMENT IN PROSTATECTOMY\*

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Preparation is the keynote to the successful termination of a prostatectomy, and that is where the great advance in prostatic surgery has been effected in the last ten or fifteen years.

Not every old man with an enlarged prostate comes to operation. It is where there is obstruction that operation is demanded. Obstruction may be gradual, or it may be sudden. The slow evolution of the various methods employed for the relief of prostatic obstruction has brought us to the point where we are agreed that the object in view is the removal of the obstruction, so far as this is possible. Our most

satisfactory results are obtained in the adenomatous enlargements. The indication here is to remove the prostate. Various contra-indications to this operation have been brought forward, and rightly so, in view of the manner in which the operation has often been performed in the past. The present technic of prostatectomy, the step by step method, has removed many of these contra-indications. During the past few years, patients have been carried through this operation and placed upon their feet, with urinary system properly functioning, whom formerly I would have looked on as sure mortalities, and I believe a number of them would have been. If one has the greatest interest of the patient at heart, the first consideration in dealing with a pathological condition is, to relieve the lesion in such a manner that the patient's life will be preserved; second, that function will be restored; third, to accomplish such a readjustment in a way that entails the minimum of pain and inconvenience.

We do not have to go back many years to find speed of operation given as the greatest factor in the success of the removal of the prostate.

Formerly it was thought that this pathologic condition, which has slowly progressed, often over a period of years, and which had resulted in interference with the working of a system whose function it is to eliminate poisons from the body, the progress of such pathologic condition endangering the immediate organs involved and poisoning the entire system, must be relieved by an operation which, if not performed at once, and if not executed in a few minutes, would certainly eventuate in death. This is not logical. A condition arrived at through the slow progress of a pathologic entity with far-reaching complications, cannot be relieved at once. The time necessary for its relief will be more or less in proportion to the time involved in the culmination of the pathologic process in the final condition. We often hear advocated a two-step prostatectomy, but personally I do not care how many, or how few steps there are. I prefer the term, "step-by-step prostatectomy," the number of steps to be employed in a given case to be determined by the conditions met in that case. The objects in view are as few shocks as possible during the readjustment, and a live patient at the end.

The outcome of any major operative procedure depends largely upon the general physical condition of the patient. The prostatic has usually reached the age of declining vigor, and in addition to this, certain changes in the vascular, digestive and renal systems are always present in varying degree, depending on the stage and duration of the urinary obstruction. Much depends upon a complete diagnosis. Certainly, from a standpoint of mortality, the odds are in favor of the operator who proceeds with

\*Read in a symposium at the regular weekly meeting of the Surgical Section of the Highland Park General Hospital, October 22, 1925.

a full knowledge of the conditions which are responsible for his patient's symptoms, rather than the one who knows only that some obstruction of the urinary tract associated with an enlargement of the prostate, which has been determined by rectal examination only, is present.

Diagnostic procedure should include first of all a complete case history. Inquiry should be made especially as to the previous existence of renal, or vesical disease. It should be determined whether specific urethritis, which may have resulted in urethral stricture, or prostatic infection has occurred.

Any previous urinary disturbance should be noted. During the general physical examination, the surgeon should be able to form an opinion as to the general vigor of his patient; special attention being given to the lungs and heart, the blood pressure, condition of heart muscle, nervous system, etc., being on guard especially for the presence of spinal cord disease.

The question often arises as to whether or not a thorough diagnostic procedure should be carried out in a particular case before operation. This, of course, is largely a matter involving the personal judgment of the surgeon in any given case. No exact rule can be applied. It is safe to say, however, that as far as the physical condition of the patient will permit, complete preliminary examination and diagnosis should be insisted upon, with the possible exception of cystoscopy, which, though often desirable, is frequently not indicated.

These are old men, varying in age from the seventh to the tenth decade, and excretion is poor. The prime indication with these patients is to improve elimination. The first consideration is to prevent absorption from the bladder and to relieve the kidneys; the next is to promote elimination in other systems which are laboring under the unusual amount of work thrown upon them. To prevent further absorption from the bladder, and to relieve the kidneys of back pressure, drainage of the bladder is indicated. Too sudden institution of this measure is often disastrous. I have seen patients in a uremic state for days following a complete emptying of the bladder at one sitting by catheterization, and I have often observed this after suprapubic drainage when retention of urine has been complete or incomplete, but of long standing.

In a patient with retention, carrying over six ounces of residual urine, the bladder is never emptied at the first examination, if he has not been catheterized before. In those free from infection, the patient is seen several times, a number of days apart, draining off a little more each time. With a markedly over distended bladder, as long as two weeks have been allowed to elapse before completely emptying the blad-

der. During this time observations are made and records kept of the blood chemistry. This not to the exclusion, of course, of other clinical data such as blood pressure, urinary output, etc. The blood chemistry, however, is the chief criterion as to the rapidity with which we may proceed in this readjustment of the patient's physiology. And I wish right here to state as emphatically as possible, *uremia follows haste*. Remember that these patients are mentally, organically and many times clinically fatigued and we have to do everything we can to fortify that situation.

There are few cases that cannot be catheterized by using a local anesthetic in the deep urethra, by employing the proper type of catheter for the individual case, and by exercising care and patience in manipulation. When the catheter has been introduced, it should be retained, that is, fastened in, and the urine drawn off slowly, a little at a time, replacing part of the bulk at each sitting with boric acid solution, finally emptying the bladder. The catheter should be retained until the patient shows no signs of uremia; a suprapubic drainage may then be established. Even after such careful catheter drainage, this step will often result in a decided return of uremic symptoms showing that suprapubic drainage is more complete than that by urethral catheter.

Suprapubic cystotomy, is however, the most dangerous step in the course of this whole affair. It is after this, and not after the enucleation of the prostate, that the mortalities occur. A preliminary cystotomy proves often to be the last resort from which these patients do not rally, and too, because of haste. Frequently when the blood chemistry and the phenol-sulphonephthalein excretions are not changed by urethral catheter drainage, a suprapubic cystotomy is followed in a few days by a marked increase in phenol-sulphone-phthalein output, and a drop in blood retention of non-protein nitrogen and creatinine.

Patients with incomplete retention, or those who have been accustomed to catheterization may usually, I say usually, be drained at once suprapubically. It is entirely possible to establish suprapubic drainage without completely emptying the bladder at the time the drainage is established. In fact, the bladder may be emptied a little at a time in exactly the same manner as by urethral catheter.

Suprapubic drainage is carried out preferably under local anesthesia, which does not interfere with the intake of foods and fluids. The bladder is filled with fluid until it comes high in the wound and the placed catheter clamped. The incision is made to the bladder and the peritoneal fold is carefully raised. Two guy sutures are inserted high in the bladder, the catheter clamp removed and the fluid drained off. Between these sutures, by which the bladder is

steadied, it is opened by tearing a hole with a sharp pointed pair of artery forceps. The Pezzer catheter is quickly inserted, being stretched over an introducer. As soon as the mushroom is in the bladder and the catheter is released from the introducer, it is clamped. The tube completely fills the opening in the bladder wall, and there need be no leakage alongside. The guy suture may now be tied in such a way as to insure a tight enclosure, and the clamped off catheter can be released from time to time, as much or little urine as desired be allowed to escape. While bringing the patient to this stage, much may be accomplished by giving fluids by mouth and by rectum in as large amounts as can be assimilated. Free elimination by the intestinal tract is important. A laxative for the upper tract and colon irrigations below, will maintain a free exit and prevent absorption. It is well to have the old man out of bed as much as possible, as this aids his circulation, gives him strength and improves his morals. A good appetite in the absence of distention is a fair indicator of the patient's condition. A high blood pressure is to be preferred to an abnormally low one.

The administration per rectum by drip method, of a solution of glucose with sodium bicarbonate, giving in as large amounts as the bowel will tolerate, will prove to be a valuable aid in maintaining a good circulation and renal condition, stabilizing the patient generally. The importance of blood transfusion is not yet properly valued and will, if employed often, be the one measure that will enable the surgeon to conduct a case to a successful issue. Renal function tests are important during this stage, while the patient is slowly acquiring a new balance.

The actual figures on blood chemistry, phenol-sulphone-phthalein output, and specific gravity are not as important as ascertaining the fact that a new level has been established, which shows little variation. When the new level has been established, as proven by repeated estimations, including a pretty constant blood pressure over a period of four or five days, if the tongue is clean and moist, if the patient takes nourishment in sufficient quantities and assimilates properly, one may enucleate the prostate.

#### CONCLUSIONS

1. While after care is important, pre-operative care is still more important.
2. Best results are obtained in the adenomatous type of prostate.
3. Uremia follows haste.
4. Speed rate is to be determined by general condition of patient, and laboratory estimations that are made at least every second day.
5. Gas-oxygen anesthesia is the one of preference.

6. There should be no fixed rule as regards either a one, two, or three step prostatectomy. The steps should vary in number as the individual case may demand.

7. The ordeal should not be considered as an operation, but a readjustment of the patient's physiology.

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#### SOME PROBLEMS OF THE MEDICAL PROFESSION\**I*

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Human suffering in one form or another has always existed and seems to be inseparably connected with life. Suffering in another has always excited a feeling of sympathy in one and a desire to give relief to the sufferer. With increasing intelligence and the growth of knowledge, the causes of, and the means of affording relief from, suffering became better understood and there arose a group or class of individuals who devoted their time and attention to mitigating the sufferings of others. From this humble origin the modern physician has developed. As is well known, in early times those who ministered to the afflicted were actuated largely by sympathy or a desire to do good, and were possessed of a feeling of altruism which often had a religious basis, consequently little thought was given to the matter of compensation for services rendered, but remuneration was limited almost entirely to gratuities, or honoraria. This same practice prevailed to some extent even down to the last generation, when many doctors of the so-called "old school" seldom or never sent out bills, but were content to receive as compensation for their services whatever their patients were inclined to give. Anything beyond this was held to be unethical. Is it any wonder, then,

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that a profession that for so many ages has inherited such a tradition, a profession born and bred in humanitarianism and altruism, a profession that by precept and practice has always been charitable, and, as it were, stood aloof from the commercial world, should have acquired so little knowledge of sound business methods?

Medical men devoting their lives to the pursuit of knowledge relating to the relief of human suffering developed a spirit of individual liberty which gave little thought or attention to other problems of life, and swept away by their altruism they have given freely of the results of their labor for the benefit of mankind. It is no wonder, then, that such a profession has been a ready tool in the hands of propagandists for the advancement of socialistic ideas and has fallen an easy victim of commercial institutions for the enrichment of their stockholders. Lawmakers the world over have recognized these frailties of the medical profession—frailties when viewed in the light of intelligent business principles—and have made use of them for personal advancement or for the furtherance of political ends. Medical men, by having these frailties appealed to, have frequently performed services voluntarily and without compensation which it was the plain duty of individuals themselves, or of the state, to provide for. Had the profession been less unsophisticated and had more thought been given to the ultimate harmful effects of such voluntary services on the welfare of the people as a whole, these errors would not have been committed. The fact that these services were given voluntarily, though thoughtlessly, has often been seized upon by lawmakers as an excuse for making them compulsory. In this way the medical profession during the past few years has done more for the advancement of socialism than anything that has been said or done by ardent proponents of this fallacy.

#### MISTAKEN CHARITY

This should not be interpreted as conveying the idea that the physician should not engage in benevolent, altruistic, and charitable works. On the contrary, there is a humanitarian side to the practice of medicine which no right-minded physician ever forgets, and no person who does not feel and appreciate this should engage in that profession. No one is called upon to do real charity more frequently than the physician, and be it said to his credit, no one responds more readily or more cheerfully. In addition to this individual charity, the physician should always do his duty as a citizen and take his part with others in all proper work of this kind, but there is a vast difference between the physician giving charity to the needy one who applies to him for such services and

the giving of his time and energy to the public in a matter that it is the plain duty of the public to provide for. In matters of this kind, all other persons engaged in the work are suitably compensated for services, but the physician is expected to donate his. There is no question that many of the schemes of a socialistic nature along this line that have been promoted and fostered by the state, in which the physician either voluntarily or involuntarily has been brought into service, were much better for the welfare of the people if left undone. The physician should give more heed and study to matters of this kind and learn to discriminate between those things that are truly altruistic and those that are not.

It will be granted without discussion that the physician is an essential sociologic factor in the present day community, and that his business is the care of his patients' physical and mental conditions in health and disease, and that if he is to be successful in his work the conditions of modern civilization demand that it be conducted in accordance with sound business principles. Business, in its common and limited sense, means the particular line of work in which one is engaged as a means of a livelihood, but it also has a broader and more general significance, namely, the general principles which underlie the numerous transactions and exchanges that take place between individuals or organizations. Experience has shown that unless these fundamental principles be followed, disaster in one form or another is likely to result sooner or later. It is an oft-repeated saying and one with which most investment salesmen will agree that the doctor as a rule is the most gullible and unsophisticated of investors, and from what has been said the reason is quite obvious. The ancient traditions of his calling have made him altruistic; listening constantly to the complaints of his patients, which he accepts as true since they are seeking his services for their own benefit, he has become unduly credulous; always endeavoring to inspire hope and confidence in others, he becomes hopeful and confiding; knowing little of fundamental principles of business he seldom analyses propositions to see if they are sound; but accepts them with his credulous, hopeful, confiding, unsophisticated mind, often with disaster.

This is not said with the intention of offering offense, but simply to call attention to a bit of psychology which may help to explain some other frailties of the physician's mind when it comes to certain other matters that concern his own business. It will be assumed that every physician, naturally, wishes to be successful in his life's work. At the present time, in order that he may properly prepare himself for his work, it is necessary for him to invest not only considerable money, but also

many years of time and hard work, and if it be granted that the physician is a necessary, or even a desirable factor in the present-day social structure, it must be admitted that he is entitled to a fair return on his investment of capital and labor. The usefulness of a physician to the community in which he lives depends upon his knowledge and skill and his ability to keep up with the rapid advancements in his profession. In order to maintain himself at a proper standard of efficiency, it is necessary that he constantly add to his capital investment, and this he can do only if he receive sufficient remuneration for his services. Unfortunately, physicians frequently cut off their just returns by reason of their own follies.

#### OUR OWN FOLLIES

Attention will be directed to two ways in which this is brought about. In the first place, physicians are shirking their work and lose many patients, and often considerable income, by referring too many cases to commercial laboratories, etc., to do those things which they themselves should do. Many of these laboratories are owned and conducted by laymen for purely commercial purposes, and the ethics of the profession are not always respected. Most of the ordinary examinations and tests necessary to a correct diagnosis can, and should be, made by the physician in his own office. If he is too busy to do this work himself he is busy enough to have an assistant to do the technical work for him, but he alone should judge of the import and value of the findings co-ordinated with the history and physical examination of the patient.

Any physician who sends a patient to one of these laboratories to have an ordinary urinalysis made is not only losing a fee to which he is entitled, but is running the risk of losing the patient as well, for many patients sent to such laboratories fail to return to the doctor. The next time that patient thinks he should have his urine examined, he does not go to the doctor, who, he thinks, will simply send him to the laboratory, but he goes directly to the laboratory for the examination, and while there the suggestion is frequently made that he have a blood examination, or some other test made, and some laboratories go so far as to send word to those whose urines have been examined by them that for a specified sum per annum they will examine the urine as often as is necessary and will advise the patient as to what should be done for any abnormal condition that may be found. This means not only a financial loss to the doctor, but also the loss of confidence in the doctor by the patient. If a doctor is not able or willing to make the ordinary tests and examinations which every doctor should do for a diagnosis, but has to send the patient to a

commercial laboratory, he should expect that the patient will soon reason, and not illogically, that he might as well go to a laboratory at once for a diagnosis, and many are doing just this thing.

There are a few tests, of course, that cannot be made outside of a laboratory, but the doctor should be careful not to patronize any laboratory that furnishes reports directly to the patient. Again, there are laboratories that advertise to give all kinds of serologic and injection treatments, which should be given only by the physician himself, or under his immediate supervision and, unfortunately, there are physicians who send patients to such laboratories for these treatments and receive a commission, or a division of the fee from them for the work thus referred, of course a dishonest and reprehensible practice. These laboratories are constantly encroaching on the field of the practice of medicine to the direct loss of income and prestige of the physician, a condition for which the physician alone is responsible.

#### COMMERCIALIZED MEDICINE

The next matter to which attention is directed is the increasing number of commercial organizations, stock companies created ostensibly for the purpose of making periodic health examinations or special examinations and tests, but all of them practicing medicine to some extent in one form or another. The claim is made by some of having an altruistic basis, but the payment of dividends on stock outstanding belies these claims. By appealing to the altruism of the profession with the usual sophistry, many medical men have been induced to lend their aid to these institutions not realizing that the money which went to pay the dividends to the stockholders came out of their own pockets. Commercial organizations furnishing periodic health examinations cannot exist without the aid of the medical profession and it is a curious bit of psychology that blinds the medical man to the fact that a corporation is getting the money for the work which he does. The physician makes a thorough physical examination of an individual sent to him by the corporation, makes out a complete report and sends it to the home office. The corporation pays the physician a small nominal fee for doing the work and then charges the individual examined a much larger sum for transmitting to him the results of the examination. It would seem that nothing but a childlike lack of ordinary business judgment would permit one to thus sell for a mess of pottage valuable services which another turns into gold. If the physician's examination and report have any value, he is entitled to receive for them what they are worth. It is pure sophistry to claim that their worth is increased by being passed through an office,

perhaps a thousand miles away. In fact, the value of the examination to the patient is much greater when communicated to him by the physician who makes it and who has thus come in direct contact with the individual than it can possibly be when passed through an absent third party. Hence, by the corporation method the patient fails to receive full value for the money paid to the corporation, and the doctor fails to receive proper compensation for his services. But the monetary loss to the physician and to the patient is not the only loss sustained by this kind of corporation practice. There is the loss of that personal relationship between physician and patient which is of so much importance to the welfare of the latter. The claim is made that such corporations act as an intermediary between the patient and the physician. When it becomes necessary for an intermediary or a runner, to act in order to bring the patient and the physician together, the physician has lost his independence and self-respect, and the decadence of the profession is assured.

#### THE REMEDY

These in brief, are some of the baneful influences that are operating today to rob the profession of its influence, its independence, and its income. We should remember, however, that they are due largely to the frailties and follies of the physician himself, and that the remedies lie in his own hands. If these influences are to be counteracted, physicians must be qualified and willing to give the high grade of personal service to which the patient is entitled. They must evince that same benevolent, altruistic, and charitable spirit that has always characterized the profession, but they must show commercial organizations that are making tools of them for profit that they will conduct their professional matters on sound business principles.

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*I:—The above article is lifted from the Wisconsin State Medical Journal. It contains so much food for thought that to abstract it would be to lose the application of the points made. Dr. Harris has set forth our problem, he has advanced the remedy—will the profession apply it?—Editor.*

#### HEALTH IN RELATION TO CITIZENSHIP IN URBAN AND IN RURAL COMMUNITIES

John A. Ferrell, New York (Journal A. M. A., Aug. 15, 1925), summarizes his paper as follows: Public health is one of the major community interests. Community funds wisely used for health service yield large returns. The scope of the health service will vary with problems, resources and the public conscience, but in all cases should include basic activities. In the interest of economy and efficiency, the political unit should be large enough

to permit the employment of a well rounded unit of trained full-time personnel. The cost of the service should be assumed jointly by the state, county and towns on an equitable basis. The rural community is economically handicapped, so that unaided it cannot finance health and other services approaching in adequacy that of urban communities. It is being abandoned to an alarming degree. The urban community cannot enjoy its present prosperity and civic advantages indefinitely unless its outlying country which furnishes foods, raw materials and markets is afforded similar advantages. The urban and rural communities have a common interest in the equalization of taxation and also of facilities for health and for educational, social and economic welfare. This should be accomplished through the larger political unit, such as the state. Experience in this direction has been encouraging. The plan should be extended.

THE JOURNAL

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YOUR FORUM—

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IT FOR THE

EXPRESSION OF

YOUR VIEWS

ON

MEDICAL SUBJECTS

# PUBLIC HEALTH ACTIVITIES

*Edited By*  
MICHIGAN DEPARTMENT OF HEALTH

## NEPHRITIS

Nephritis was first described early in the nineteenth century by Richard Bright, a physician, and the term Bright's disease is used quite as frequently as nephritis and may be regarded as synonymous.

In the consideration of nephritis we are dealing with a disease entity which frequently is accompanied with the breaking down, or at least with the disturbance of other organs, the most common of which is represented by the cardio-vascular-renal syndrome.

The most common single contributory cause is some form of organic heart disease and in some cases this cause is preferred, but in each case assignment to causes has been made in accord with the practice followed by the United States Bureau of the Census.

This article does not include those cases in which nephritis is given as a contributory cause to some other condition which, according to the rules of statistical practice would take the assignment rather than nephritis.

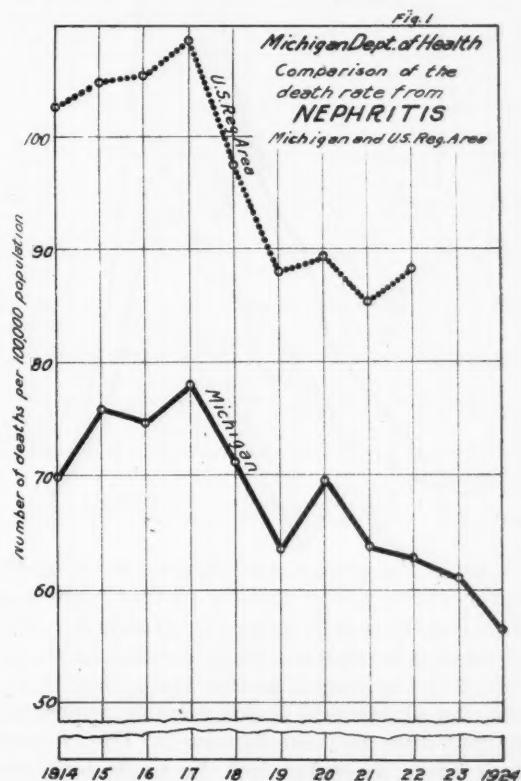
Michigan had a death rate from nephritis of 61.0 per one hundred thousand population for 1923, and 56.4 for 1924. These rates have been steadily falling for the past few years. The apparent reason for this is earlier recognition of the disease and better medical practice, but we must also consider as an element a better control of acute communicable diseases resulting in a decreased incidence or decreased virulence, as it is well known that these acute diseases and particularly scarlet fever, frequently result in an impairment of the kidneys with a lowered resistance to organic disturbance in later life. Then, too, the general education of the people and better habits of living must be regarded as factors.

The rate for Michigan has been continuously below that of the registration area of the

United States, as shown by the following table, No. 1, which shows the rates for 1914 to 1922 inclusive, the last year in which the figures for the United States registration area are available.

More rural than urban people die of nephritis. In 1924, of the 2,194 deaths from this disease, 41 per cent were rural, as opposed to a rural population of 38 per cent, and 59 per cent of the deaths were urban, and the urban population is 62 per cent. By urban we mean they were residents of villages or cities with a population of 2,500 or more. No explanation is offered for this showing, but a little thought will suggest many elements which might affect it.

More males than females die of this disease, but Michigan has an undue proportion of males in the population. The ratio indicates that the



rate for the sexes was about the same, 53 per cent of the deaths were males to 52.5 of the population, and 47 per cent of these deaths were females to 47.5 of the population.

Age is a most important factor. The greater number of deaths are found in the age group seventy-five to seventy-nine, but deaths do occur

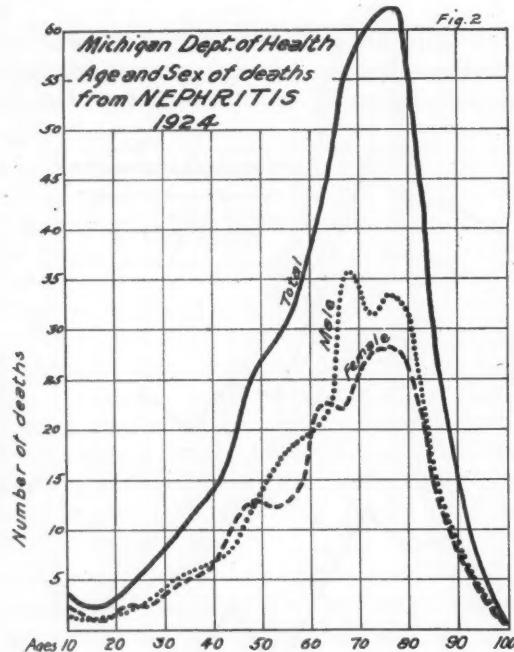
cur in every age group above ten years. The following table shows the ages by sex.

TABLE NO. II.

Showing the Age and Sex Distribution of Deaths From Chronic Nephritis in Michigan, in 1924

Ages	Males	Females	Total
10-14	5	9	14
15-19	6	5	11
20-24	11	13	24
25-29	14	12	26
30-34	30	25	55
35-39	31	26	57
40-44	36	43	79
45-49	64	69	133
50-54	80	58	138
55-59	38	68	166
60-64	96	119	215
65-69	177	107	284
70-74	155	139	294
75-79	171	143	314
80-84	122	108	230
85-89	56	55	111
90 and over	21	22	43
	1,173	1,021	2,194

A better understanding of this will be found by the examination of Figure 2. Here the mode



is found in the group seventy-five to seventy-nine, the curve rising rapidly to this point and then falling abruptly until extinguished. The male curve is irregular and is bimodal in shape, the mode being found in the age group sixty-five to sixty-nine and a second rise appearing at seventy-five to seventy-nine. The female curve is more irregular, but the mode is in the group seventy-five to seventy-nine, as in the total curve, but the group sixty-five to sixty-nine which shows the mode in the male curve shows a marked drop in the female curve.

The age distribution of the rural and urban deaths would be rather interesting if we were able to tell the relative age distribution of these two elements, but as the census reports do not

give this information, it is thought best to omit this comparison, as it would be misleading.

In considering the contributory causes of death, we find that 896, or 41 per cent do not give any contributory cause, but it must not be taken to mean that there was no contributory cause, but simply that there was none stated on the certificate of death. Frequently some condition which is symptomatic of the disease itself, such as uremia or albuminuria are stated as contributory causes, but as these conditions are not contributory, but rather symptomatic of the disease, they are not regarded as contributory causes. Many physicians regard contributory causes, which frequently or commonly occur in a disease, as a part of the disease entity and therefore do not feel it necessary to declare it when certifying to the cause of death. So, we may conclude that this number of 896 represents a percentage of deaths in which there was no *unusual* development in the progress of the disease, as well as those deaths in which there were no complications.

In 1,298 deaths, representing 59 per cent of the group under observation, some contributory cause was stated, the frequency of the various causes being shown in Table No. III. That

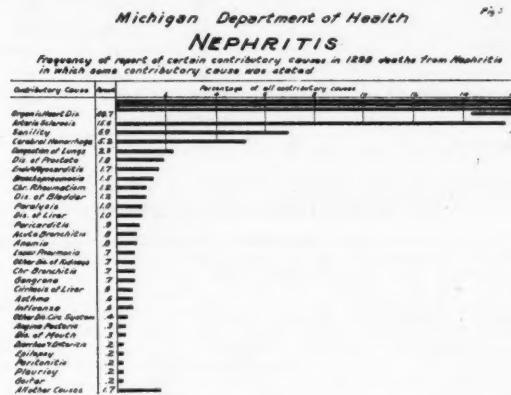
TABLE NO. III.

Showing frequency of report of certain contributory causes in 1,298 deaths from Nephritis in which some contributory cause was stated.

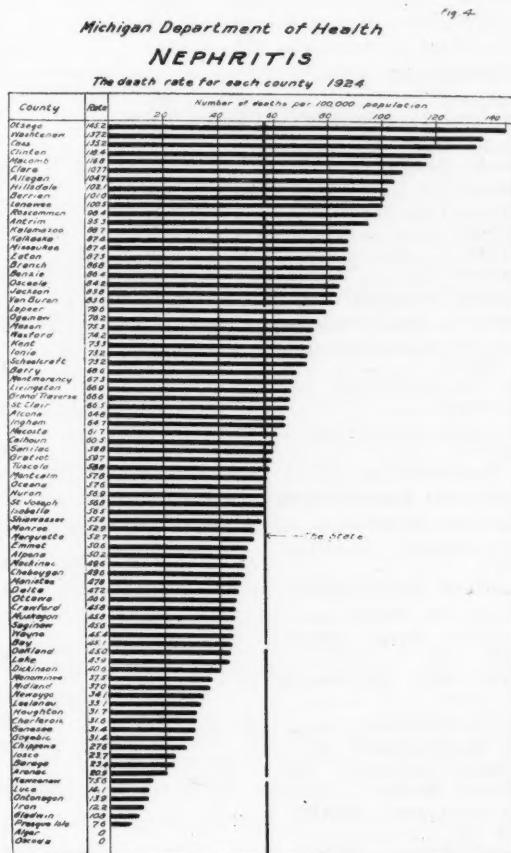
Cause	Number	Per Cent
All Contributory Causes	1,298	100.0
Organic Heart Disease	645	49.7
Arteriosclerosis	203	15.6
Senility	89	6.9
Cerebral Hemorrhage	68	5.2
Congestion of Lungs	30	2.3
Diseases of Prostate	23	1.8
Endocarditis and Myocarditis	22	1.7
Bronchopneumonia	19	1.5
Chronic Rheumatism	15	1.2
Diseases of Bladder	15	1.2
Paralysis	13	1.0
Diseases of Liver	13	1.0
Pericarditis	12	.9
Acute Bronchitis	11	.8
Anemia	10	.8
Lobar Pneumonia	9	.7
Other Diseases of Kidneys	9	.7
Chronic Bronchitis	9	.7
Gangrene	9	.7
Cirrhosis of Liver	8	.6
Asthma	8	.6
Influenza	8	.6
Other Diseases of Circulatory System	5	.4
Angina Pectoris	4	.3
Diseases of Mouth	4	.3
Diarrhea and Enteritis	3	.2
Epilepsy	3	.2
Peritonitis	3	.2
Pleurisy	3	.2
Goitre	3	.2
Other Causes	22	1.7

Included in the item "other causes," are two cases each of, Other Diseases of Nervous System and Scarlet Fever (Remote), and one case each of Other General Diseases, Hemorrhage, Typhoid Fever (Remote), Diseases of Stomach, Embolism, Hernia, Erysipelas, Disease of Nasal Fossae, Diabetes, Furuncle, Disease of Larynx, Diseases of Urethra, Purpura (Remote), Alcoholism. Indefinite four. This is illustrated in Figure 3.

organic heart disease should represent the most common contributory cause will not surprise medical men, as the relation of this disease to nephritis is classical. Many forms of heart lesions are represented in this group, but only those causes in which the nephritis is the preferred title according to statistical practice are shown.



It will be noted that many of the causes stated in this list may easily be direct sequela of nephritis, but they have been presented as stated on the certificates. A further study of



another group of deaths and preferably a larger group would be of interest as it would

determine whether or not the concurrent incidence is accidental or persistent.

The geographical distribution is very interesting, the following table, No. IV, gives the rate for each county. It will be observed that the rate varies from 145.2 per 100,000 population in Otsego county to 7.6 for Presque Isle county and that two counties, Oscoda and Alger, had no deaths. The bar diagram, Figure 4, compares these rates in order of magnitude. In forty-five of the counties the rate was in excess of the rate for the whole state and in 38 counties it was below.

It is to be regretted that the data relative to contributory causes is not more easily available for a period of years, but the newer methods of compilation will enable a study such as this to be continued with the coming years and it is hoped to render a service not only to those in the practice of medicine, but through them to all mankind.

TABLE NO. IV.

**Death Rate from Nephritis  
Per 100,000 Population by Counties for 1924.**

The State	56.4	Gd. Traverse	66.6	Midland	37.0
Alcona	64.8	Gratiot	59.7	Missaukee	87.4
Alger	.0	Hillsdale	102.1	Monroe	52.9
Allegan	104.7	Houghton	31.7	Montcalm	57.8
Alpena	50.2	Huron	56.9	Montmorency	67.3
Antrim	95.3	Ingham	64.7	Muskegon	45.8
Arenac	20.9	Ionia	73.2	Newaygo	34.1
Baraga	23.4	Iosco	23.7	Oakland	45.0
Barry	68.6	Iron	12.2	Oceana	57.6
Bay	45.1	Isabella	56.5	Ogemaw	76.2
Benzie	86.4	Jackson	83.8	Ontonagon	13.9
Berrien	101.0	Kalamazoo	88.7	Osceola	84.2
Branch	86.8	Kalkaska	87.4	Oscola	.0
Calhoun	60.5	Kent	73.3	Otsego	145.2
Cass	135.2	Keweenaw	15.6	Ottawa	46.6
Charlevoix	31.6	Lake	43.9	Presque Isle	7.6
Cheboygan	49.6	Lapeer	79.6	Roscommon	98.4
Chippewa	27.6	Leelanau	33.1	Saginaw	45.6
Clare	107.7	Lenawee	100.5	Sanilac	59.8
Clinton	118.4	Livingston	66.9	Schoolcraft	73.2
Crawford	45.8	Luce	14.1	Shiawassee	55.8
Delta	47.2	Mackinac	49.6	St. Clair	66.5
Dickinson	40.6	Macomb	116.8	St. Joseph	56.8
Eaton	87.3	Manistee	47.8	Tuscola	58.8
Emmet	50.6	Marquette	52.7	Van Buren	83.6
Genesee	31.4	Mason	75.3	Washtenaw	137.2
Gladwin	10.8	Mecosta	61.7	Wayne	45.4
Gogebic	31.4	Menominee	37.5	Wexford	74.2

—W.J.V.D.

## AN EPIDEMIC OF DIPHTHERIA

A group of ten cases of diphtheria occurring in a village of not more than one hundred persons was recently investigated. The local physician had been called in to attend the first case, but as far as can be gathered, he overlooked the necessity of obtaining any information from the patient as to possible origin of infection, and failed to obtain throat cultures.

What followed is a history, and a typical one, of how an epidemic may be started. For the sake of convenience, the first case which occurred in the village will be referred to as Mrs. D and her history given.

Mrs. D visited in Detroit from August 22 to 29, staying with friends whose little girl had had diphtheria about three weeks previously, but who had been released from quarantine at the time of the visit. Mrs. D, four days after her arrival, developed a sore throat. No physician was called at that time, and she returned to her little community in a couple of days, where a local physician was called in attendance. A diagnosis of simple tonsilitis was made, consequently no precautions were taken to guard the immediate contacts or friends. Neither was any antitoxin given to the patient.

Mrs. D's child, a girl aged seven years, was allowed to continue in school and since the return of Mrs. D seven children in the school and three adults have contracted the disease. Here is a contact infection, par excellence, spreading among immediate associates in a small community.

All the cases of sore throat, when seen by the investigator, had been cultured and positive reports obtained on every one.

It is worth mentioning that Mrs. D now, after approximately one month of illness, has a typical post-diphtheritic paralysis of the soft palate and uvula with consequent nasal tone and regurgitation of liquids. A contact, a woman of forty-five, has developed a marked myocardial complication.

There can be no doubt in anyone's mind as to the diagnosis in these cases. Ten cases of diphtheria in a community of not more than one hundred persons—10 per cent of the population stricken with an entirely preventable disease.

—C.H.B.

The most notable feature of the October communicable disease report was the sharp increase in the number of typhoid fever cases reported. It will be recalled that typhoid fever is frequently a post-vacation disease, so that some rise might be expected, but an increase, much more than double the 1924 figures and considerably more than the average for five years, is certainly to be deplored.

Diphtheria shows a very satisfactory figure, being less than a year ago, and less than half the average.

Whooping cough, while showing a decrease from the previous month, is very much higher than the preceding year and comment has reached us from medical men of the very high virulence.

#### PREVALENCE OF DISEASE

	October Report—Cases Reported		Oct.	Oct.	5 years
	September	1925			
Pneumonia	185	337	197	264	
Tuberculosis	632	353	428	439	
Typhoid Fever	153	211	94	174	
Diphtheria	225	476	504	1091	
Whooping Cough	652	521	291	345	
Scarlet Fever	353	667	833	935	
Measles	70	160	324	260	
Smallpox	17	13	56	105	
Meningitis	9	12	11	10	
Poliomyelitis	19	10	159	95	
Syphilis	1444	1349	1233	838	
Gonorrhea	1142	1093	1031	965	
Chancroid	13	9	15	15	

#### CONDENSED MONTHLY REPORT

Lansing Laboratory, Michigan Department of Health  
October, 1925.

	+	-	+	-	Total
Throat Swabs for Diphtheria					2584
Diagnosis	77	495	...	...	
Release	179	376	...	...	
Carrier	7	1404	...	...	
Virulence Tests	29	17	...	...	
Throat Swabs for Hemolytic Streptococci					931
Diagnosis	214	356	...	...	
Carrier	48	313	...	...	
Throat Swabs for Vincent's	41	527	...		568
Syphilis					12491
Wassermann	1147	5059	78	...	
Kahn	1212	4935	56	...	
Darkfield	3	1	...	...	
Examinations for Gonococci	211	1812	...		2023
B. Tuberculosis					455
Sputum	96	352	...	...	
Animal Inoculations	1	6	...	...	
Typhoid (Incl. Kalamazoo State Hosp.)					617
Feces	60	364	...	...	
Blood Cultures	9	60	...	...	
Urine	1	3	...	...	
Widal	52	66	2	...	
Dysentery					89
Intestinal Parasites					19
Transudates and Exudates					291
Blood Examinations (not classified)					422
Urine Examinations (not classified)					352
Water and Sewage Examinations					853
Milk Examinations					99
Toxicological Examinations					6
Autogenous Vaccines					15
Supplementary Examinations					595
Unclassified Examinations					348
Total for the Month					22758
Cumulative Total (Fiscal year)					80258
Increase over this month last year					3154
Outfits Mailed Out					16135
Media Manufactured, c.c.					640590
Diphtheria Antitoxin Distributed, units					33326000
Toxin-Antitoxin Distributed, c.c.					59620
Typhoid Vaccine Distributed, c.c.					9624
Silver Nitrate Ampules Distributed					8472
Examinations Made by Houghton Laboratory					2467

# The Journal

OF THE

## Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

## PUBLICATION COMMITTEE

R. C. Stone, Chairman.....	Battle Creek
C. D. Darling.....	Ann Arbor
J. D. Bruce.....	Saginaw

## Editor and Business Manager

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Grand Rapids, Michigan

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DECEMBER, 1925

Report Malpractice Threats Immediately to Doctor F. B. Tibbals, 1212 Kresge Building, Detroit, Michigan.

### Editorials

#### CHRISTMAS GREETINGS

This issue completes the last number of the present volume of the Journal. It also records the approach of another holiday season and terminates the Society's fiscal year. Introspective and reflective meditations are crowded aside in our daily lives by reason of the insistent demands that are made upon all of us. The passing days afford scant opportunity for self-analysis, for our places shift so rapidly in the scenes of life. By the decrees and customs that the years have established the Christmas holidays subdues our quest for personal profit and gain. While influenced by the spirit of good will that predominates, we may well pause awhile and ponder upon the changes that the year has wrought. Hence this editorial comment.

As a Society it has been the most achieving year in our history. This is evidenced by our broadened field of activity and the enlarged plans of organizational inclusiveness that sought the enhancement, to a greater degree, of the individual member's interests. We sought and attained a satisfactory degree of service to the people and discharged in no small measure our obligation to instruct and enlighten the public

in regard to the fundamentals and truths of modern medicine. We have disclosed the manner in which health may be conserved and disease lessened. We have nourished the spirit of professional fellowship and inspired its dominancy. In brief, we have taken a wonderfully successful advance stride in all our Society's legitimate avenues of endeavor. It has been an outstanding year that initiated a new organizational era which will carry us on to greater things in 1926.

And what about our members as individuals? You either did or did not profit. If you profited it was because you embraced the presenting opportunities. If you failed, it was because you were negligent, self-centered or mired in the rut of habit. Remember that the harvest you reap is dependent upon yesterday's sowing. Your tomorrow depends upon the seeds you sow today. Fate recedes as knowledge advances. Your prosperity, your freedom, is hedged in only by your personal limitations. It is only as you determine to rise superior to what is called destiny that you will ever achieve the greater ends. Life always will be, to a great extent, what we ourselves make it. So, too, will be your professional career, and in this day no man can attain a fullness of success in practice if he remains aloof or without the organizational fold, or fails to participate in his medical society's endeavors. The man who complained that an "ill-looking fellow" dogged his footsteps, discovered that it was his own shadow. We wonder how many of us have ever inspected the shadow we cast. We suggest that you do so before entering upon a new year. The point that we are seeking to establish is that as we individually respond to and meet up with our professional responsibilities, in that degree will we achieve the better things in life and in our profession. We can't stand still; we either progress or retrogress, and it is our own volition that determines our stride. Our Christmas wish is that all may find the inherent impulse and desire to forge ahead. That each may and will participate in the benefits that our Society can and will impart to its members during the coming year.

Included in that wish is the personal one that this Christmas will be a truly Merry one. That friendships may be renewed and that sunshine and joy enter through the chinks that time has made. We sum the thought with the hearty greeting—Merry Christmas To You All.

#### OUR ADVERTISING POLICY

From time to time we have directed our members' attention to our advertisers and have urged patronage of them because the advertising revenue received makes it possible to publish our Journal. Advertisers will not expend money for advertising space unless they

receive fair return upon their investment, and this return is orders and purchases by our members. Therefore, as these firms support and make possible the Journal, our members should, in a fair spirit of reciprocity and appreciation, give these business firms preference and place their orders with them.

Our advertisers are honest, reliable firms and business institutions. We accept only honest ads. Each firm, each advertisement, is investigated by the Co-Operative Medical Advertising Bureau of the American Medical Association. No ad is accepted or published that does not have the Bureau's approval and endorsement. We believe we are thereby giving to our members and readers a most reliable guarantee for their protection. With such an assurance we urge again that you confer your patronage to our advertisers and thereby help us to increase our advertising revenue. If we can be of further assistance, please command us and when a salesman comes into your office, ask him if his house is advertising in *your* Journal and, if not, may we recommend that you place your orders with those salesmen whose firms do. Here is an opportunity to help.

#### BETWEEN OURSELVES

##### PRESIDENT'S EDITORIAL

Your president considers it a privilege to express from time to time his personal opinions concerning things helpful one to another and to the medical profession in general.

If we wish to be as good as we say we are, or even as good as some of our patients say we are, we must be up and doing every minute. Every one of us could improve tomorrow when compared with yesterday. Medical science is on the jump and the people expect us to keep up, though now and then we do get frightfully behind.

One very important fact which will appear before us tomorrow is the new University Hospital. Flexner, in his book on medical education concerning hospitals and clinics, says, "The state universities in this matter are on the right track. The University of Michigan has long controlled in the interest of education a University Hospital ultimately supported by local taxation." As the present new hospital is the third in succession for the university to operate, we may be expected to accept it in the same spirit as we did the others. The first hospital was built to furnish clinical material for teaching purposes. The second was built in 1890 to continue this policy, but out of the management of this, the care of the sick was developed and the state began to pay for the care of certain cases.

"Michigan now has a hospital worthy of the

great state and the great university it serves, huge—complete in every detail, adequate to the needs of the people of Michigan and the medical students who are to become its future physicians."

Thus the Michigan Alumnus, October 10th number, pushes out into the world the "New University Hospital completed." "Nowhere else in the country is there a hospital comparable, serving the same educational ends." To my mind the educational ends of this wonderful hospital will not be attained until it is prepared to teach all in medicine that can be taught in a medical school and a university hospital.

The people of this state, 4,000,000 in round numbers, have built this hospital because they believe in doctors. Soon 100,000 persons will visit this hospital yearly and those who are unable to care for themselves at home will remain for observation and treatment. There will be about 22,000 bed patients each year. To care for these and direct the teaching of students there should be a harmonious group of physicians, nurses, clerks, stenographers, etc., who have been taught the university spirit of loving to serve. A place where ideas purported to be for the good of humanity, may be worked out and discussed with a reverence for truth, where youth shall teach youth while the hoary professors check up or check out. Their duties will make them very busy men and women.

Every doctor in the state should make a pilgrimage to this hospital to get the bigness of its possibilities. When you walk down the long corridors leading to wards, or stand in the amphitheatre, you may have a desire to go to school again, the very thing that many of us should do. Clinics are arranged abroad every year, physicians attend them to receive a musty education from old hospitals.

Why not have these or better clinics at home in our own new hospital and have the best men in the world meet us here? May we not ask the board of regents, the deans of the graduate and the medical school to arrange courses, both clinical and laboratory, some of which were not possible before the building of the new hospital.

The University authorities are willing to admit through the Alumnus that this is the greatest hospital in the world. Let us help them to prove it.

C. G. Darling.

#### REPORT OF HEALTH EDUCATION LECTURES GIVEN UNDER THE DIRECTION OF THE JOINT COMMITTEE ON PUBLIC HEALTH EDUCATION— 1924-25

The Michigan Public Health Education program was organized in 1921 and is carried on

through the University of Michigan Extension Division under the direction of the Joint Committee on Public Health Education. This committee consists of officially accredited representatives from the Michigan State Medical Society, University of Michigan, Michigan Department of Health, Detroit College of Medicine and Surgery, Michigan State Dental Society, Michigan Tuberculosis Association, Michigan State Nurses' Association, Michigan State Conference of Social Work, and the Wayne County Medical Society Committee on Public Education. The State Medical Society has five representatives on the Committee; the University of Michigan, four; and the other organizations represented, one member each.

Since the organization of this work it has grown steadily in scope and effectiveness, the number of lectures assigned during 1924-25 showing an increase of 22 per cent over the number assigned during the preceding year, and an increase of over 300 per cent over the number assigned in 1921-22.

The assignments for the past year, together with the average attendance per lecture and the total aggregate audience attending these lectures is shown in the following table:

Number of health lectures assigned to centers throughout the state outside of Detroit	209
Number of health lectures given in Detroit	122
Total number of health lectures assigned	331
Average attendance per lecture outside of Detroit	130
Average attendance per lecture in Detroit	170
Total attendance outside of Detroit	27,000
Total attendance in Detroit	21,000
Total attendance on all lectures assigned	48,000

These health lectures are given by a selected staff of speakers chosen by the Joint Committee and are assigned to schools, parent teacher associations, granges, industrial clubs, and other organizations throughout the state interested in public health. The lectures are given free of charge, each organization representing the Joint Committee taking care of the traveling expenses of its respective speakers. In the assignment of health lectures in 1923-24 in Detroit an attempt was made to have speakers appear before high school audiences which numbered in some cases as many as 3,000 students, as was the case, for example, in Cass Technical High school. This attempt to reach such large audiences, however, did not prove altogether satisfactory, and consequently during the past year (1924-25) student groups were broken up into sections. On the whole this plan has given very much more satisfactory results than that followed the preceding year.

In the following table there is given a list in alphabetic order of the centers throughout

Michigan where health lectures were given during 1924-25:

Alger	Gallien	Olivet
Alma	Grand Rapids	Otisville
Ann Arbor	Grant	Onsted
Atlas	Grayling	Owosso
Baraga	Hamburg	Paw Paw
Battle Creek	Hamtramck	Pentwater
Bay City	Hancock	Perry
Belleville	Harbor Springs	Petersburg
Benton Harbor	Hastings	Pierson
Berkeley	Hesperia	Pittsford
Berlin	Holton	Plainwell
Blissfield	Hopkins	Port Huron
Bridgewater	Houghton	Redford
Buchanan	Howard City	Richland
Byron	Howell	River Rouge
Cadillac	Ithaca	Rochester
Cedar Springs	Jackson	Roseville
Chelsea	Kalamazoo	St. Johns
Clifford	Kaleva	Saginaw
Climax	Lacota	Sand Lake
Constantine	Lawrence	Sandusky
Coral	Leslie	Schoolcraft
Croswell	Lima	Shaftsbury
Davison	Luther	Silver Lake
Deckerville	Mackinaw City	South Lyon
Detroit	Martin	Sparta
Dowagiac	Menominee	Spring Lake
Eaton Rapids	Milford	Traverse City
Eau Claire	Millington	Union City
Ecorse	Montague	Urbandale
Fenton	Mt. Clemens	Vermontville
Flint	Muir	Vernon
Flushing	Muskegon	Waldron
Fowlerville	Napoleon	Whitecloud
Frederic	Newaygo	Whitehall
Fremont	Newberry	Ypsilanti
Galesburg	Novi	

The following list contains the names of members of the speaking staff of the Joint Committee who, during 1924-25, gave one or more health lectures throughout the state:

A. Altshuler, M. D., Detroit.  
 A. D. Allen, M. D., Bay City.  
 Percy Angove, Lansing.  
 W. E. Bailey, D. D. S., Lansing.  
 Mrs. B. H. Bartlett, A. B., Ann Arbor.  
 Sinclair Battley, M. D., Detroit.  
 C. E. Boys, M. D., Kalamazoo.  
 C. D. Brooks, M. D., Detroit.  
 G. M. Brown, M. D., Bay City.  
 J. D. Bruce, M. D., Saginaw.  
 F. G. Buesser, M. D., Detroit.  
 Hugh Cabot, M. D., Ann Arbor.  
 M. D. Campbell, M. D., Detroit.  
 H. R. Carsten, M. D., Detroit.  
 J. T. Case, M. D., Battle Creek.  
 W. E. Chapman, M. D., Cheboygan.  
 W. R. Charles, Lansing.  
 J. L. Chester, M. D., Detroit.  
 David R. Clark, M. D., Detroit.  
 H. L. Clark, M. D., Detroit.  
 Ada P. Coleman, R. N., Grand Rapids.  
 F. A. Coller, M. D., Ann Arbor.  
 T. B. Cooley, M. D., Detroit.  
 A. W. Crane, M. D., Kalamazoo.  
 H. F. Crossen, M. D., Detroit.  
 H. H. Cummings, M. D., Ann Arbor.  
 F. E. Curtis, M. D., Detroit.  
 W. R. Davis, D. D. S., Flint.  
 Wm. DeKleine, M. D., Saginaw.  
 Marjorie Delavan, A. B., Lansing.  
 J. H. Dempster, M. D., Detroit.  
 W. T. Dodge, M. D., Big Rapids.  
 Douglas Donald, M. D., Detroit.  
 Chester A. Doty, M. D., Detroit.  
 C. F. DuBois, M. D., Alma.  
 W. J. DuBois, M. D., Grand Rapids.  
 C. W. Eberbach, M. D., Ann Arbor.  
 E. L. Eggleston, M. D., Battle Creek.  
 E. J. C. Ellis, M. D., Benzonia.

C. R. Elwood, M. D., Menominee.  
 R. D. Engle, M. D., Petoskey.  
 Elsie Erley, A. M., Ann Arbor.  
 A. F. Fischer, M. D., Hancock.  
 W. H. Fraser, Lansing.  
 Dona Gallor, Ann Arbor.  
 N. Ginsburg, M. D., Detroit.  
 W. H. Gordon, M. D., Detroit.  
 T. K. Gruber, M. D., Detroit.  
 Oswald Gruhzit, M. D., Detroit.  
 R. B. Harkness, M. D., Houghton.  
 Mary B. Haskins, M. D., Detroit.  
 Charles Heald, M. D., Battle Creek.  
 Robert Henderson, M. D., Niles.  
 W. D. Henderson, Ph. D., Ann Arbor.  
 W. C. Hirn, C. E., Lansing.  
 L. J. Hirschman, M. D., Detroit.  
 A. W. Hornbogen, M. D., Marquette.  
 Louise Howe, A. B., Ann Arbor.  
 G. Carl Huber, M. D., Ann Arbor.  
 Melita Hutzel, Lansing.  
 J. B. Jackson, M. D., Kalamazoo.  
 A. L. Jacoby, M. D., Detroit.  
 A. F. Jennings, M. D., Detroit.  
 W. W. Kahn, M. D., Detroit.  
 M. B. Kay, M. D., Detroit.  
 W. J. Kay, M. D., Lapeer.  
 R. M. Kempton, M. D., Saginaw.  
 C. S. Kennedy, M. D., Detroit.  
 J. B. Kennedy, M. D., Detroit.  
 G. L. Kiefer, M. D., Detroit.  
 Marie A. Kiernan, Lansing.  
 H. F. Kilborn, M. D., Ithaca.  
 Louis Klein, M. D., Detroit.  
 H. B. Knapp, M. D., Battle Creek.  
 F. J. Larned, M. D., Grand Rapids.  
 A. Leenhouts, M. D., Holland.  
 S. Levin, M. D., Houghton.  
 H. B. Lewis, M. D., Ann Arbor.  
 B. C. Lockwood, M. D., Detroit.  
 R. E. Loucks, M. D., Detroit.  
 Don C. Lyons, D. D. S., Jackson.  
 W. H. MacCracken, M. D., Detroit.  
 A. J. MacKenzie, M. D., Port Huron.  
 J. G. R. Manwaring, M. D., Flint.  
 F. B. Marshall, M. D., Muskegon.  
 W. H. Marshall, M. D., Flint.  
 B. H. Masselink, D. D. S., Grand Rapids.  
 Helen S. Mitchell, Ph. D., Battle Creek.  
 A. R. Moon, M. D., Saginaw.  
 M. A. Mortensen, M. D., Battle Creek.  
 E. N. Nesbitt, M. D., Grand Rapids.  
 W. S. O'Donnell, M. D., Ann Arbor.  
 J. P. Parsons, M. D., Ann Arbor.  
 F. A. Poole, M. D., Lansing.  
 J. H. Powers, M. D., Saginaw.  
 H. E. Randall, M. D., Flint.  
 Theo. Raphael, M. D., Ann Arbor.  
 J. A. Reeder, M. D., Clare.  
 H. A. Reye, M. D., Detroit.  
 H. M. Rich, M. D., Detroit.  
 U. G. Rickert, D. D. S., Ann Arbor.  
 E. P. Russell, M. D., Ann Arbor.  
 Suzanne B. Sanderson, M. D., Detroit.  
 B. A. Shepard, M. D., Kalamazoo.  
 N. Sinai, M. S., Ann Arbor.  
 E. W. Sink, M. D., Ann Arbor.  
 C. C. Slemmons, M. D., Grand Rapids.  
 R. R. Smith, M. D., Grand Rapids.  
 F. R. Snyder, M. D., Ann Arbor.  
 E. D. Spalding, M. D., Detroit.

W. J. Stapleton, Jr., Detroit.  
 Claire Straith, M. D., D. D. S., Detroit.  
 John Sundwall, M. D., Ann Arbor.  
 Miss Tenny, Lansing.  
 A. C. Thompson, D. D. S., Detroit.  
 L. C. Towne, M. D., Lansing.  
 Mary Trafford, R. N., Kalamazoo.  
 Pearl Turner, Lansing.  
 T. J. Werle, Lansing.  
 J. A. Wessinger, M. D., Ann Arbor.

The Michigan Public Health Education program is now well beyond the experimental stage. It is a going concern. Interest on the part of the people of the state is very marked, as is shown by the increasing number of calls for these lectures. A careful study of the whole subject of the effectiveness of the Health Education program during the past year leads to the conclusion that the best results are obtained through the medium of Parent-Teacher Associations and high school assemblies. By all odds the most effective work carried on under the auspices of the Joint Committee during the past year was that in connection with addresses given to high school students. Experience proves that children of high school age are interested in information which has to do with the efficient use of their bodies. The human body is a machine, more complicated in structure and more wonderful in its operation than that of the automobile or the radio set. There is no reason why the future generation of Americans should not understand that science applies just as definitely to this human machine as it does to the mechanical devices found today in every shop and home.

The hope of developing an intelligent public opinion, so far as scientific medicine is concerned, lies in the education of the children of the state. It is hoped, therefore, that during the coming year an increasing number of lectures may be given to the students of our high schools. It is hardly necessary, however, to add that interesting and forceful speakers are required to hold the attention of a high school audience. As far as possible, lecturers who appear before student audiences should be provided with illustrative material of some sort, such as simple apparatus, charts, or slides.

In conclusion, I desire on behalf of the Joint Committee to express appreciation of the very valuable services rendered by the physicians of the state and others who have volunteered their services in this work. At present we have on our speaking staff 240 speakers, offering more than 400 subjects. We still need, however, more speakers, especially for sections in the western and northern parts of the state.

W. D. Henderson,  
 Sec'y. Joint Committee.  
 Ann Arbor, Mich., Oct. 5, 1925.

## A MINIMUM PROGRAM

FOR

## COUNTY MEDICAL SOCIETIES

## Section 1.—SCIENTIFIC—

(a) Ten meetings are to be held during the year. Local speakers are to appear before three meetings with definite planned discussions.

(b) A program of physical examinations shall be instituted in which all physician members shall agree to have a complete physical examination themselves and each shall agree to secure at least five patients who will agree to have complete physical examinations.

## Section 2.—SOCIAL AND INFORMAL ACTIVITIES—

Each Society is to have at least three dinner meetings. The speakers for these meetings shall be public speakers, educators, financiers, but not medical men. At least one picnic shall be held. At least one social evening, in co-operation with members of closely related organizations shall be arranged.

## Section 3.—SCIENTIFIC TEAMS—

Each Society shall have a group of two or three members who will prepare a program and give it on request before at least three other Societies.

## Section 4.—PUBLIC HEALTH INFORMATION AND EDUCATION—

Each Society shall plan to have at least one Public Health lecture group which shall give at least five lectures in cities and communities outside of their resident communities or cities. Adjoining counties are to be included. Each Society shall co-operate and assist other organizations so that the following public lectures may be held. (Co-operation shall be established with the Extension Department of the University of Michigan, and the Joint Committee on Public Health.)

- 1 lecture for each High School.
- 1 lecture for each Parent-Teacher Association.
- 1 lecture for each Luncheon Club.
- 1 lecture for each Woman's Club.
- 1 lecture for each Association of Commerce.

## Section 5.—PUBLICITY—

Each meeting, scientific or public, shall be reported to the local newspapers in such form that at least one important point of value can be read by the reader.

The Secretary shall report each month to the State Medical Society the complete record of all activities and accomplishments.

## HOSPITAL SUPERVISION OF OBSTETRICS

Hospitals have a definite public responsibility in protecting the interests of patients admitted for treatment. That responsibility extends beyond mere nursing and feeding; it is concerned with professional attendance. To that end the hospital that is alert to its responsibilities voices it by certain regulations and rules. We are glad to impart the type of regulation that is exercised by many of our hospitals as evidenced by the following rules:

### THE USE OF FORCEPS IN OBSTETRIC CASES—REPORT OF COMMITTEE

1. High forceps should never be applied unless their use is concurred in by competent consultation.
2. Forceps should not be applied in medium or deep transverse arrest until sufficient time has elapsed for proper molding of the head to have taken place, usually one and one-half to two hours, providing there are firm uterine contractions.
3. When the head is on the perineum, a period of one to two hours should elapse before the application of forceps is made. The fetal heart rate must be watched and in case of marked increase, or an unusual slowing, the application of low forceps should be considered. If retardation is due to a rigid perineum in the absence of uterine inertia, episiotomy should take precedence over the application of forceps.
4. In persistent occiput posterior positions where the uterine contractions are becoming weak with no evidence of spontaneous rotation and the head is firmly engaged, forceps should be applied according to the Scanzoni maneuver.
5. In breech deliveries where there is difficulty in delivering the aftercoming head forceps should be used in preference to unrestricted traction on the neck, after the Smellie-Veit maneuver.
6. In general, face presentations contraindicate the use of forceps.
7. Contracted pelvis contraindicate the use of forceps unless sufficient molding has been allowed to take place, and it is evident that slight traction by forceps will suffice to deliver the head.

### GENERAL NOTES

- (a) Careful detail should be given to the preparation of the patient and the same strict aseptic technic as for any major surgical operation should be carried out in minute detail. The patient should be completely anesthetized and in case of slight disproportion between the diameters of the head and the pelvis, the modified Walcher position should be utilized. The patient should be catheterized.
- (b) Accurate diagnosis of the position of the fetus should be made. The forceps blades should be applied over the parietal bosses in all cases. If the forceps blades are properly applied they will lock in position without the use of force.
- (c) After forceps are applied traction should be made gently at intervals of about one minute. In the interim the forceps should be unlocked. When traction is being applied, it should always be in such a manner that the curve described by the blades corresponds to the curve of the pelvic canal, thereby preventing damage to the maternal soft parts.

The above instructions and rules were adopted as mandatory on all physicians and surgeons practicing

obstetrics in the Grace Hospital by the attending medical staff, October 13, 1925.

Milton A. Darling, Chairman.  
R. Milton Richards,  
George B. Hoops,  
H. G. Bevington,  
Earl W. May.

At the May, 1925, meeting of the Attending Medical Staff, the following resolution was adopted:

"RESOLVED, That the following operations be not carried out in the hospital except after competent consultation, consultants to leave findings in writing:

- "(a) Therapeutic Abortions
- "(b) Caesarian Sections
- "(c) Craniotomies."

At the June, 1925, meeting of the Attending Medical Staff, the following rule was adopted:

"That sterilization, where no pathology is present, shall not be performed without the written consent of the patient and the husband or wife."

Attention is also called to the fact that at the December, 1924, meeting, the following minimum requirements for any surgeon wishing to operate at the Grace Hospital, were adopted:

- "1. Education: Graduate of a Class A college.
- "2. Experience: At least one year of hospital work and two years as assistant to a trained and competent surgeon.
- "3. Shall demonstrate that he is well grounded in surgical anatomy and pathology and competent in diagnosis."

The Grace Hospital,  
W. L. Babcock, Director.

## DEDICATION OF THE UNIVERSITY HOSPITAL

On November 19, 20 and 21 the new hospital of the University of Michigan was formally dedicated. After a six-year period of construction this building has been completed at a cost of nearly four million dollars. The building is a nine-story face brick construction, entirely fireproof and adequately ventilated. The wards are on the first floor and the operating rooms are so situated that they have an outlook on the Huron river and the hills beyond. The x-ray department is located on the ground floor and below this is housed the department of pathology. Larger amphitheaters are available for teaching purposes.

The hospital, under its new system, comprises several departments, including the department of business, registration, social service, nursery, dietetics, housekeeping, records and others. To enable the entire unit to properly function a staff of about 1,500 will be required. This will include medical staff, internes, nurses, social service workers, kitchen and ward help, janitors, porters, maids and others necessary for the upkeep of the building. The new Couzens home for nurses has been finished and is now occupied by the undergraduate nurses. This building compares favorably with other women's dormitories on the campus.

A program of addresses and clinics was given in connection with the formal opening of the

new hospital. Dr. William J. Mayo of Rochester, Minnesota, gave an address at the Natural Science Auditorium at 4:15 p. m., Thursday, November 19th. This was the annual Mayo lecture and was attended by the entire student body of the medical department as well as by many visiting physicians. The subject was "Splenic Syndromes." After reviewing the latest ideas of the function of the spleen, Dr. Mayo reported 413 cases of splenectomy at the Mayo clinic. These were tabulated as to pathology and the results of treatment.

The formal dedication occurred on the evening of November 19th. At this meeting, held in the Hill Auditorium, President Clarence C. Little presided. He very briefly spoke of the hospital and its relation to the community and the state, and then in a most appropriate and gracious manner introduced the distinguished speakers of the evening. The first speaker of the evening was our own Victor C. Vaughn who, for forty-five years was a teacher and for thirty years dean in the medical department of the University. His address had to do with the history of the organization of the medical department and its development up to the present time. He paid fitting tribute to the many distinguished teachers who have served on its faculty. He also paid tribute to the many distinguished graduates who have honored the university by their achievements as clinicians, teachers and investigators in medicine. The

second speaker was Dr. W. S. Thayer, Professor of Medicine at Johns Hopkins. His address was highly interesting and scholarly. Among other interesting features was a discussion of full time professorships in the medical department. The last speaker of the evening was Dr. William J. Mayo, who is himself a graduate of the medical department of the University of Michigan and one of its most distinguished alumni. He declared that the hospital of the present time and of the future would find its greatest work in the prevention of disease rather than in its cure. He spoke of the hospital's responsibility in furnishing post-graduate instruction to physicians of the state as well as the work of furnishing instruction to the undergraduate students of medicine. In conclusion he said that the health of the people should be the first consideration of a government.

On Friday evening a second general meeting was held at the Hill Auditorium. The meeting was presided over by Dr. Hugh Cabot, dean of the medical department. Dr. H. A. Haynes, director of the hospital, was the first speaker. He outlined the program of the directors of the hospital. The hospital should be a community health and educational center, devoting its energies to preventing disease as well as curing the sick. He described a three-fold program of service to the State of Michigan, through the training of doctors and nurses, caring for



University Hospital

the sick, and the carrying out of research in the problems of medical science. Dr. J. B. Herrick, professor of medicine of Rush Medical College, University of Chicago, prefaced his remarks by saying that no hospital fulfills its highest function unless it stresses the educational side of its program. He pointed out that the lessons learned in hospital service should be of benefit to society as a whole. Dr. C. P. Emerson, dean of the medical school at the University of Indiana, spoke of the responsibility of the hospital to render a service to the entire state as well as to the individual patient. Many of the social and economic problems of the race have their basis in physical ills. He emphasized the importance of the social service workers.

Dean Cabot closed by reminding the audience that the hospital was the property of the whole state and not of a group of individuals. He urged the physicians of the state to offer their criticisms of hospital policies, saying that co-operation by all concerned is essential for success.

Friday morning at the hospital, especially interesting clinics were held by Doctors W. J. Mayo and W. S. Thayer. Luncheon was served to visiting physicians at noon. The hospital was open for general inspection from 1:30 to 2:30. Friday afternoon and Saturday morning was given up to clinics given by representative physicians of the state. A list of these clinics is given below.

Friday, November 20, 1925:

#### AMPHITHEATRE

1:30—Basal Blood Pressures. Dr. F. J. Sladen, Detroit.  
 2:15—X-ray Aspects of Some Heart and Aortic Diseases. Dr. A. W. Crane, Kalamazoo.  
 3:00—Diseases of the Chest. Dr. J. S. Pritchard, Battle Creek.  
 3:45—Acute Infections of the Pelvis. Dr. A. M. Campbell, Grand Rapids.

#### PATHOLOGY AMPHITHEATRE

1:30—Treatment to be Advocated in Different Types of Malignant Disease. Dr. J. W. Vaughan, Detroit.

2:15—Thoracic Aneurysm. Dr. W. H. Marshall, Flint.  
 3:00—Subject to be announced. Dr. H. E. Randall, Flint.

3:45—Hernia. Dr. G. A. Seybold, Jackson.

#### ASSEMBLY ROOM

1:30—Subacute Bacterial Endocarditis. Dr. J. T. Sample, Sabinaw.  
 2:15—Foreign Protein Therapy in Treatment of Typhoid Fever. Doctors J. H. Powers and R. M. Kempton, Saginaw.  
 3:00—Tuberculosis in Childhood. Dr. B. H. Douglas, Northville.

#### 3:45—Fractures of the Forearm.

Dr. O. L. Ricker, Cadillac.

Saturday, November 21, 1925:

#### AMPHITHEATRE

9:00—Arteriosclerosis and Essential Hypertension. Dr. C. G. Jennings, Detroit.  
 9:45—Diverticulitis of the Sigmoid. Dr. Max Ballin, Detroit.  
 10:30—Gynecological Cases. Dr. R. R. Smith, Grand Rapids.  
 11:15—Surgery of the Gall-bladder. Dr. A. McLean, Detroit.

#### PATHOLOGY AMPHITHEATRE

9:00—Some Phases of Industrial Ophthalmic Surgery. Dr. D. M. Campbell, Detroit.  
 9:45—Cholecystography. Dr. J. T. Case, Battle Creek.  
 10:30—Pneumonia. Dr. G. E. McLean, Detroit.  
 11:15—Management of Wolfe Grafts. Dr. Ferris Smith, Grand Rapids.

#### ASSEMBLY ROOM

9:00—The Anaemias of Infancy and Early Childhood. Dr. T. B. Cooley, Detroit.  
 9:45—Goitre. Dr. R. H. Harris, Battle Creek.  
 10:30—Diseases of Digestive Tract. Dr. B. C. Lockwood, Detroit.  
 11:15—Pulmonary Tuberculosis. Dr. J. T. Watkins, Detroit.

#### LARGE LECTURE ROOM

9:00—The Borderline Pelvis. Dr. Geo. Kamperman, Detroit.  
 9:45—Glaucoma. Dr. G. M. Waldeck, Detroit.  
 10:30—Goitre. Dr. C. E. Boys, Kalamazoo.  
 11:15—Carcinoma of Breast. Dr. R. E. Balch, Kalamazoo.

Friday, November 20th, the Department of Dietetics will have diets on display in the Dietetic Laboratory, G 114, Ground Floor. These diets are typical of those used in the University Hospital for the following diseases and conditions:

Diabetes, Nephritis, Obesity, Hypothyroidism, Gastric Ulcer, and also such diets as Post-operative, Cardiac, Laxative and Anti-Laxative.

The arrangement for guides, ushers and registration will be in charge of "The Galens."

## Editorial Comments

The meeting of the Joint Committee on Health Education was held in Ann Arbor on October 6, 1925. The following members were present: Doctors Cabot, MacCracken, Warnshuis, Jackson, Lyons, Dempster, Huber, Sundwall, Mr. Werle, Miss Alice Lake appointed to represent the State Nurses Association and Professor Henderson. There were also present as guests, the following: President Little, Dr. Darling, Dr. Clark, Dr. Bruce, Dr. Sinai, and Mr. H. G. Smith.

The major portion of the meeting was devoted to the consideration of reports of special committees as follows:

1. Committee consisting of Doctors Dodge, Cabot and Warnshuis. Report on the relation of the nursing service of the state to the health service. This report was presented by Dr. Cabot. (See attached copy of report, marked No. 1).

After the reading of the report there was a discussion of the subject by President Little, Dr. Sundwall, Dr. Huber and Miss Lake. It was moved and carried that the report be accepted and be made available for publication in the State Medical Journal. The committee was continued and directed to make a report on the plan for the education in colleges and universities looking toward nursing and child hygiene.

2. Report of the committee consisting of Doctors Jackson and Biddle, and Mr. Werle on publicity as relating to the health programs. This report was read by Dr. Jackson. (See attached copy of this report marked No. 2).

It was moved by Dr. Cabot that the committee on publicity be continued with power to add to its membership as may be desired, and with instructions to create a press bureau. Motion carried.

3. Report of Dr. Warnshuis relative to the co-operation of the Joint Committee with the Gorgas Memorial Committee of the American Medical Association, relating especially to the distribution of health material. (See attached data marked No. 3).

Motion that the report be accepted and filed. Carried.

4. Report of the committee consisting of Doctors Henderson, Huber, and Sundwall on the matter of lecture outlines, literature, and bibliography which may be of use to members of the health lecture staff. Mr. Henderson, as Chairman of the Committee, called upon Dr. Huber and Dr. Sundwall to make individual reports. Dr. Huber's report dealt with the subject of lecture outlines and bibliographies, especially as relating to material available in the University Library. Dr. Sundwall called attention to printed lecture material as outlined in the Harvard Health Lecture Series and also the National Health Series. (See data marked No. 4).

It was moved and carried that the Secretary be instructed to write each member of the speaking staff, calling attention to the lecture outlines and published material for use in connection with preparation of health lectures and also calling the attention of members of the speaking staff to the fact that slide material may be obtained by writing Dr. MacCraken, Dean of the Detroit College of Medicine and Surgery.

We have repeatedly called to the attention of our members, the matter of reporting malpractice threats. By this is meant threats to commence claims or suits for civil damages wherein is alleged malpractice, error or mistake, or other claims for damages resulting from the conduct of your profession.

Alleged claims and suits have been constantly increasing. The current year has been the most productive of such claims and suits and we urge you to be constantly on your guard. Many lawsuits can be avoided by prompt attention to claims made by patients. Investigation made preliminary to a lawsuit, including a medical examination or other facts obtained in the investigation, presents, even to an attorney who is contemplating bringing suit upon a matter, a discouraging factor.

These so-called blackmail claims becoming lawsuits have demonstrated their influence toward creating not only unfavorable notoriety for the professional man, thus affecting him in his community, but also in creating unfavorable and erroneous public opinion regarding the entire profession.

The causes of the present condition and of the rapid growth of malpractice and blackmail claims and suits are manifold. However, the most important is lack of prompt attention to such claims at their inception. Therefore, we urge prompt notice of any event or occurrence arising that may result in a claim or suit being brought against you.

The movement for social control through education has recruited a new ally in eyesight conservation, which enters the literature of this growing field with a volume embodying the findings of a survey in education, industry and kindred pursuits. The work, published by the Eye Sight Conservation Council of America, with headquarters in New York, says that eyesight conservation has attained the dignity of a "definite organized movement," initiating in a broad constructive way a comprehensive program of nationwide proportions."

The compiler is Joshua Eyre Hannum, M. E., research engineer of the Council, and the editor is Guy A. Henry, the Council's general director. The volume, its sponsors explain, is issued in response to the need for a general review of the entire subject. It condenses the results of an exhaustive study, comprising a summary of the literature of the field since 1914 and the results of original research and investigations conducted by the Council.

Studies were made of the statutory provisions of all states relating to vision tests of school children, and surveys of the public school systems of 250 of the largest cities in the United States, of 300 normal schools and teacher's colleges, of 750 colleges and universities, and of 750 industrial and commercial establishments.

The literature of eyesight conservation has been widely scattered and not until the appearance of this volume has it been available for the use of government and social agencies, educational institutions, parents and teachers, and the general reader. Such terms as "normal vision" and "defective vision," concerning which confusion is said to exist both among writers and the public, are defined. "Defective vision" and "defective eyes," we learn, do not have the same meaning, the first being always the result of defective eyes, but the second not always resulting in defective vision.

There are chapters dealing with Eye Hygiene, Eye Diseases, Eye Defects, Eyesight and Education, Eyesight and Occupation, Eye Protection, and Illumination. The concluding chapter comments interestingly on the struggles with poor eyesight of noted persons including Francis Parkman, Tschaikowski, George Eliot, William Wordsworth, Theodore Roosevelt, Goethe, Margaret Fuller, Jonathan Swift, John Greenleaf Whittier, H. G. Wells, Honore de Balzac, Adelaide Ristori, Basil King, Taine and Nietzsche. Whittier, it is said, was color blind, and Taine was cross-eyed. Relentless use of the eyes, according to the volume, hastened the death of Balzac.

The statistics presented of defective vision among school children and industrial workers are a challenge to the social system. Prevalence of this fault is so widespread as to cause not only heavy econ-

omic and health losses, but to disclose a seemingly significant clue to the growth of truancy and crime.

Simple visual acuity tests, for example, reveal that 25 per cent of the school children in the public schools of the United States have manifest defects of vision and symptoms of eye-strain. Conditions much more serious were found to exist in the country's workshops.

The preface expresses the hope that the book "may be instrumental in arousing greater interest in a subject of vital importance to society."

In every progressive movement that builds for the future investigation will usually reveal some one man, with vision and zeal, giving of himself that the end sought may be attained. Frequently we do not learn of the extent of their efforts until months and years have gone by. Sometimes not until their death has occurred. We are at all times eager to record such individual efforts and accord credit—in this instance posthumous—by publishing the following personal letter. Note the date:

May 15, 1903.

My Dear Doctor Amberg:

I spent the morning in the Atty-General's office gathering up the fragments of the Nottingham Bill. After the smoke has cleared away and the Bill has been signed it will be found that Michigan has the best Medical Act in the United States. We had a hard and nasty fight, but I want to impress upon you that We Won Out. However, do not talk of this until after the Bill is signed. I have been working 20 hours a day since Sunday, last, and have lost 25 pounds in weight, but feel good, nevertheless. In haste,

Yours very sincerely,

B. D. Harrison.

Elsewhere in this issue will be found an article on "The Problems of the Profession," by Dr. M. L. Harris, Chairman of the Judicial Council of the A. M. A. We commend the reading of it to every member of the profession. It contains some very pertinent observations and advances suggestions that may well be instituted. Do not lay this issue aside until you have read this article.

Periodic physical examination presents the profession with its greatest opportunity to render service to all people. Due to the profession's efforts, the so-called scourges have been practically conquered. Typhoid, diphtheria, yellow fever, malaria, may well be classified as preventable diseases, and tuberculosis seems to be well in hand. Heart disease bids well to become the King of Death and is closely followed by renal diseases. By educating the people to "Kill the disease before the disease kills them," we will add years to the span of human life. It can be done if we will but spread the advice to have a yearly, thorough physical examination. This is a movement of service to which unstinting support should be subscribed by every doctor.

Much thought and consideration must be given for the solution of our nursing problem and the determination as to the scope of subjects that are

requisite for the training school curriculum. The subject was well summarized by a reviewer of a Nurse's text-book when he wrote: "It may be said of nurses that no matter how many college degrees they bear, how many honorary keys they have won or how many text books they have read, the ART of nursing is learned in the hospital ward. The gift of administering gently to the sick is heaven born. The good nurse has a gentle hand and a noble heart, and strives to serve and to heal." And yet there are those misguided educational theorists and idealists who want to pump in nursing education in the class room and who ignore the bedside practice and experience. Our Training Schools need setting aright more badly than did our medical colleges twenty-five years ago. Why not start?

The Council of the Chicago Medical Society adopted a resolution concerning free medical services in hospitals and clinics. The Council held that the Chicago Medical Society should take the initiative in defining medical charity and approved free medical service to all who receive charity of any kind or description. The Council views with alarm the tendencies of hospitals, social agencies and health departments to pauperize the public by giving free service to those who can afford to pay even a part of the usual fee, and concluded that members of the Chicago Medical Society who aid such institutions in pauperizing the public may be brought before the ethical relations committee. At last we have a large, influential medical society that has awakened to the situation and which is apparently now determined to regain the control that they as well as all other medical societies have relinquished by permitting laymen and women to dominate our charity work. More power to the Chicago Medical Society to which we extend the hope that they will successfully initiate this needed reform. May the ethical relations committee deal severely with all those who seek for self-glory in attempts to obstruct the renovating process. Michigan needs a similar movement to abate the abuse of our charity service. Gentlemen, it is time you began to assert yourselves.

This issue contains our yearly index of articles, editorials and authors. We urge that you bind the twelve issues of this volume in order that you may have for reference and permanent record the progress that our Society has made during the past year.

### Among Our Letters

NOTE.—This department is the open forum of our members. Your communications and discussions are welcomed. Anonymous communications cannot be accepted, though at times names may be omitted by the Editor. Personalities will not be printed and responsibility for opinions is not assumed. We invite your interest in this department. Address: The Editor, Journal, Michigan State Medical Society, Powers Theatre Bldg., Grand Rapids, Mich.

Editor of The Journal:

Your letter of the 12th, inst., forwarded from Flint, has just reached me.

It was a gracious and friendly act of my good old State Society to confer honorary membership. I am full of appreciation and the degree of satisfaction is greater than that following any previous courtesy extended by my professional associates. And "associates" they are and will continue to be, in sentiment, although I have followed the memorable advice of the distinguished Osler, and no longer enjoy close working relationship with them.

An admirable body of men and women, this Michigan State Medical Society. And it has always been thus, but how they could scrap in the olden days. My thoughts hark back to the first meeting I attended. It was held in Lansing under the presidency of Foster Pratt, of Kalamazoo. His address written in excellent literary style on "Newcomer—Van Deusen Case," was convincing propaganda. It cleared away misapprehensions in my own mind and tended to make desirable the position subsequently offered me at Pontiac.

Those were piping times in the old organization—the days of Pratt, Maclean, the elder Frothingham, McGraw, Jas. A. Brown, Noyes, Farrand, Jerome, McCall, Rauney, Griswold, Brodie. Some of these had a peaceful strain in their make-up—all were picturesque. A considerable contingent among them waged relentless warfare and "unconditional surrender" was the motto of both sides. Of Brodie it was related that he once declared, "I don't care a damn whether I fight with the majority or with the minority, so long as I fight."

They wasted time over non-essentials, no doubt, but at all events the atmosphere was never foggy and their debates were a refreshment and joy. I do not recall the election in those days of resident honorary members and gravely doubt whether any candidate made the goal.

Then came the era of reorganization—of peace, plenty and prosperity, of good will and get together. Here was an opportunity for honorary memberships and the subscriber cannot cease facilitating himself that he survived the storm and stress period and through living long enough is now able to cast anchor in this safe harbor.

Thank you all again and again. You have been mighty good to

Yours devotedly and always

C. B. Burr.

P. S.—The allusion above to honorary membership is not to be taken altogether seriously. Elections were certainly not numerous, but I recall, indistinctly, that Ranney was made honorary member after serving many years as Secretary.—C.B.B.

#### Editor of The Journal:

In the November number of the State Journal the address of the retiring president and reports of the various committee chairmen of the Wayne County Medical Society gave a rather detailed idea of this branch of the State Society organization during the last twelve months. With the beginning of the new year we have been unusually fortunate in the meaty character of the papers that have been presented before us. Among the speakers in the two months of the year that has gone by there are included:

Loyal E. Davis, M. D., Professor of Neurology, Northwestern University, Illinois, on "Prognosis of Brain Tumor."

Hugh Cabot, M. D., Dean and Professor of Surgery, University of Michigan Medical School, on "Diagnosis and Methods of Attack upon Tumors of the Kidney."

Chas. L. Mix, M. D., Professor of Medicine, Loyola University School of Medicine, Chicago, on "Toxic Goitre."

"Indications for Thoracic Surgery in Pulmonary Tuberculosis." Medical Aspect—Herbert M. Rich; Surgical Aspect—Max Ballin, M. D.

John R. Caulk, M. D., Associate Professor, Washington University Medical School, St. Louis, on "The Punch Operation and Its Indications."

Henry A. Christian, M. D., Hersey Professor of Theory and Practice of Physic, Harvard University Medical School, on "The Achlorhydria Family Tree of Diseases."

C. D. Camp, M. D., Professor of Neurology, University of Michigan Medical School, on "Vascular Changes as They Affect the Nervous System."

Very truly yours,  
Richard M. W. Keen, Secretary.

#### Editor of The Journal:

We are sending you under separate cover a copy of the resolution passed unanimously by the Council of the Chicago Medical Society at its November meeting.

The resolution spoke for itself and we believe proper action should be taken by your State Council as well as your component Secretaries.

If we stop this constant encroachment on the life work of the physician it must be done at the earliest possible moment, and this is not too soon.

Very truly yours,  
Chicago Medical Society.  
R. R. FERGUSON,  
Chairman of the Council.

The Secretary presented the following Resolution:

#### RESOLUTIONS

Whereas, The American Public Health Association at its Annual Meeting in St. Louis, in October, 1925, listened to an Address by one of its members, favoring a new doctor in each community where a Health Officer is needed, to be known as a Doctor of Public Health, and

Whereas, Several institutions of learning have introduced courses in Public Health whereby a layman as well as a physician, may be instructed and in a comparatively short time qualify as a Doctor of Public Health, (D. P. H.) and be allowed to advise, qualify and practice preventive medicine, and

Whereas, In all probability a Bill to license a so-called D. P. H., will be introduced into the next session of the State Legislature of Illinois, and

Whereas, The Chicago Medical Society believes that all Health Officials should first be physicians, (M. D.), who have the proper knowledge of the sciences concerned in Public Health, and that such knowledge cannot be gained by any layman in two or three years, and

Whereas, Such an arrangement of a layman being a Health Official, places a double expense on the community, since it is necessary for the com-

munity to then procure the service of an M. D., in addition to a layman, and

Whereas, The State confers on an M. D. the right to practice medicine and surgery in all its branches, while the special licensing of a D. P. H. would be special legislation tending to take from an M. D. that right.

Therefore Be It Resolved, That the Chicago Medical Society believes all positions of trust pertaining to Public Health in any community should be held by physicians, (M. D.) and not by laymen holding D. P. H. licenses, and

Be It Further Resolved, That the Chicago Medical Society views with displeasure any move on the part of the American Public Health Association, which may express a desire to replace physicians as Health Officials by laymen with D. P. H. licenses, and

Be It Further Resolved, That a copy of this resolution be sent to the American Public Health Association; to all those institutions of learning where courses in Public Health are given with a view to conferring a D. P. H. Degree; and to every State Medical Society with a request that their component County Societies be made acquainted with the proposed activities of a Public Health Association, whose President is a layman.

#### ADJOURNMENT

Motion was carried that this Resolution be adopted.

On motion the meeting adjourned.

Frank R. Morton, Secretary.

#### Editor of The Journal:

I can assure you that the doctors in Oakland County should share equally with me the honor of this welcome event, the Past Graduate Conference. After a lifetime spent in the practice of medicine in Oakland County I can say the spirit and friendly co-operation of the physicians throughout the county has grown better year by year. The Post Graduate Conference was worth while from every point of view. Unfortunately for me, more than half the program was combed out in my absence. However, all with whom I have spoken have nothing but praise for it. The sessions at the Presbyterian Church were presided over with dignity and the character of the addresses so high that all present listened with attention throughout the day.

The evening meeting at the High School Auditorium, though none too well attended, addressed by Dr. Sinali was just what the laymen should know more about. The story was so simple and plain that any one could understand and at the same time was really eloquent.

The teaching and practice of medicine is now launched upon a genuine adventure, teaching on higher levels of humanity at our universities—medicine is slowly and painfully coming to its best—undoubtedly advancing. Our Medical Societies may some day be an extra mural division of university extension. There is no reason why graduation should be a separation or a session from many of the associations and some of the activities of University life.

The most cherished treasure of every alumnus is his intimate relation with teachers who have led

him to greater effort, more rational thinking and given him a desire to achieve something worthy of mankind.

The hardest problem connected with the general practice of medicine is the isolation of the rural and suburban practitioner. To me this condition is more apparent than real. The monthly meeting of the County Medical Society, the more frequent meeting of the district society, a closer relation to our State Society and affiliation with the Medical School nearest to our field of labor will lighten these difficulties. Patience, brother, do not falter.

Yours sincerely,

N. B. Colvin, Pontiac, Mich.

## State News Notes

Governor Groesbeck has re-appointed the following men on the State Board of Registration in Medicine: George L. LeFevre, Muskegon; Albertus Nyland, Grand Rapids; Ray C. Stone, Battle Creek; Nelson McLaughlin, Detroit; Guy L. Connor, Detroit.

Dr. C. B. Burr, of Flint, is spending the winter in Los Angeles.

Dr. W. T. Dodge assumed his duties on November 1st, as Chief Surgeon of the Michigan Soldiers' Home, Grand Rapids.

President Darling and Chairman of the Council, J. B. Jackson, represented our Society as Guests of Honor at the dedication of the new University Hospital on November 19th.

Dr. M. Fishbein, Editor of The Journal of the A. M. A. addressed the annual meeting of the Michigan Newspaper Editors Association on November 2nd, in Ann Arbor.

The new addition to St. Mary's Hospital, Grand Rapids, is rapidly nearing completion.

An examination was held by the American Board of Otolaryngology on October 19, 1925, at the Cook County Hospital, Chicago, with the following result:

Passed	120
Failed	23
Total Examined	143

The next examination will be held in Dallas, Texas, on April 19, 1926. Applications may be secured from the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

Dr. L. J. Hirschman, of Detroit, recently addressed the Northern Indiana Academy of Medicine on "Methods In Ano-Rectal Diseases."

Dr. L. W. Brown, Medical Examiner Pennsylvania Railroad in Grand Rapids for the past six years, has been transferred to Fort Wayne, Ind. He is succeeded in the Grand Rapids office by Dr. C. A. Leisher, who comes from Fort Wayne.

## OUR SOCIETY BUSINESS AND ACTIVITIES

HARVEY GEORGE SMITH  
EXECUTIVE SECRETARY

NOTE: This Department will each month contain a discussion and report of our Society work and planned activities. Your interest and correspondence as to your problems is solicited.

### POST-GRADUATE CONFERENCES

The past month has again demonstrated the fact that, "No activity of the State Medical Society has met with such unanimous approval as has that of the post-graduate conferences." Expressions of satisfaction come from the far end of the northern peninsula to the near neighbors of Detroit. At no place has a single word of disapproval been voiced, but on the contrary, words of praise and requests for more conferences. The conferences that continued to bring forth support from the membership of the County and State Societies are the following:

Ironwood .....	October 22
Grand Rapids .....	October 28
Pontiac .....	November 5
Saginaw .....	November 11
Port Huron .....	November 12

At Ironwood fifty doctors representing both Michigan and Wisconsin, met in conference. Nearly half of them drove from sixty to one hundred twenty-five miles and three, due to deep snow, ran over an embankment into a ditch fifteen feet deep, rolled over once in the car and, with the aid of lumber jacks a mile distant, were hauled out and continued the balance of the journey of fifty miles. No one was injured. The car was not damaged. Doctors who had not met for years shook hands and visited like old friends ought to visit.

In addition to the scientific program, two of the speakers talked to two high schools with an enrollment of twelve hundred pupils, and the Executive Secretary spoke to the Rotarians.

The following program was presented by speakers from Michigan and Wisconsin:

### PROGRAM

10:30—Physical Examination with Demonstration.	John B. Youmans, M. D., Ann Arbor
11:00—Orthopedic Examination of the Patient.	G. J. Curry, M. D., Flint.
11:30—Diagnosis of Chest Diseases.	J. S. Pritchard, M. D., Battle Creek.
12:00—Luncheon.	Joint meeting with Bessemer and Ironwood Rotarians.
2:00—Diagnosis and Treatment of Diseases of the Cervix.	Carl Henry Davis, M. D., Milwaukee.
2:30—Myocarditis.	William J. Egan, M. D., Milwaukee.
3:00—Essentials and Methods on Laboratory Diagnosis.	John B. Youmans, Ann Arbor.
3:40—Hypertension.	William J. Egan, M. D., Milwaukee.

4:10—The Management of Fractures.	G. J. Curry, M. D., Flint.
4:40—Prenatal Care.	Carl Henry Davis, M. D., Milwaukee.
5:10—Causes and Treatment of Bronchitis.	J. S. Pritchard, M. D., Battle Creek.
6:00—Dinner.	

The Grand Rapids conference brought out a larger attendance, but at the same time drew from a much larger membership. More than seventy doctors attended the conference, coming from Ottawa, Kent, Barry and Montcalm-Ionia Counties. The following program was presented:

### PROGRAM

1:30—Opening Statements.	Councillor and Executive Secretary.
2:00—Physical Examinations with Demonstration.	Willard D. Mayer, M. D., Detroit.
2:30—Fundamentals of Neurological Examinations.	Carl D. Camp, M. D., Ann Arbor.
3:00—Diagnosis of Chest Diseases.	J. S. Pritchard, M. D., Battle Creek.
3:30—Interpretation of the Physical Examination of the Heart.	M. A. Mortenson, M. D., Battle Creek.
4:10—Mentality Tests.	Carl D. Camp, M. D., Ann Arbor.
4:40—Diseases of the Liver and Blood Vessels.	Plinn F. Morse, M. D., Detroit.
5:10—The Management of the Cardiovascular Case.	M. A. Mortenson, M. D., Battle Creek.
6:00—Dinner—Informal Talks.	
7:30—Blood Vessel Accidents.	Plinn F. Morse, M. D., Detroit.
8:00—Cause and Treatment of Bronchitis.	J. S. Pritchard, M. D., Battle Creek.
8:30—The Kidney, Pyelitis, Nephritis.	Willard D. Mayer, M. D., Detroit.

The Secretary of the Kent County Medical Society, Dr. Homer T. Clay, reports as follows on the conference:

The nineteenth post-graduate conference of the Michigan State Medical Society was held in the Fifth Councilor District in Grand Rapids on October 28, 1925. The meeting was held in the Italian room of the Pantlind hotel and began at 2:00 p. m. Between 50 and 60 men attended the afternoon meeting to hear Dr. Wm. Mayer of Detroit, who gave a demonstration on the live subject of the principal points to be observed in the course of physical examinations. He was followed by Dr. Carl Camp of Ann Arbor, who demonstrated a method of making a fairly complete neurological examination in five minutes. After this, Dr. J. S. Pritchard of Battle Creek, gave a talk

on "The Diagnosis of Chest Diseases" and held the interest of his audience in his usual manner.

Dr. M. A. Mortenson of Battle Creek followed Dr. Pritchard with a talk on "The Interpretation of the Physical Examination of the Heart." Later in the afternoon Dr. Carl Camp emphasized the use and character of mentality tests. Following this, Dr. P. F. Morse of Detroit, gave a very interesting talk with demonstration of specimens on the subject of "Diseases of the Liver and Blood Vessels," and "Blood Vessel Accidents."

"The Management of the Hypertension Case" was ably discussed by Dr. M. A. Mortenson of Battle Creek.

At 6:30 dinner was served in the Rotary room of the Pantlind hotel and was attended by 70 members of the Fifth Councilor District. Several informal talks were given at this dinner, following which three other lectures were given by Doctors Morse, Pritchard and Mayer. Dr. Pritchard emphasized a new treatment of "Bronchitis," which consists of injecting iodized oil into the trachea and bronchi as originated by the French.

This was a very successful meeting and from the opinions obtained by talking with the men present, it was considered well worth their time and highly enjoyed. The adverse criticism offered was that the conference was not able to cover all the varying specialties of the day in which some of the men were interested. This certainly was a very successful post-graduate conference.

H. T. Clay, M. D.,  
Sec'y. Kent Co. Medical Society.

Dr. Letts, President of the Macomb County Medical Society, said at the dinner following the conference, "He had never attended any medical meeting where he received so much valuable information for his practise as at the post-graduate conference for the First District." The Pontiac conference brought forth more words of approval and satisfaction than any yet held. In addition to the regular scientific program, a lay meeting was organized which was sponsored by the City Department of Health of Pontiac through Dr. Neafie in co-operation with the schools of the city and a number of the Parent-Teacher Associations. The newspaper of the city gave unstinted co-operation by not only asking for material, but demanding that "honest to goodness" information be furnished. The Joint Committee on Public Health Education secured Dr. Nathan Sinai of the Department of Health and Hygiene of the University of Michigan to give the lecture for the public meeting. Dr. Sinai most excellently interpreted in the language of the layman the science of medicine by discussing his subject, "Man and Microbes." More than four hundred were present.

The following scientific program was presented to the doctors:

#### PROGRAM

10:15—Opening Statements.  
J. Hamilton Charters, M. D., Councillor.  
Harvey George Smith, Executive Secretary.  
10:30—Physical Examination with Demonstration.  
Fred Coller, M. D., Ann Arbor.  
11:00—The Essentials and Methods of Laboratory Diagnosis.  
Don Kudner, M. D., Jackson.  
11:30—The Acute Surgical Abdomen.  
Fred Coller, M. D., Ann Arbor.  
12:00—Luncheon—Presbyterian Church.  
2:00—Prenatal Care.  
Geo. A. Kamperman, M. D., Detroit.  
2:30—Orthopedic Examination of the Patient.  
F. C. Kidner, M. D., Detroit.  
3:00—Miocarditis.  
Walter Wilson, M. D., Detroit.  
3:30—Pneumonia, Cause and Treatment.  
G. L. McKean, M. D., Detroit.  
4:00—Hypertension.  
Walter Wilson, M. D., Detroit.  
4:30—The Management of Fractures.  
F. C. Kidner, M. D., Detroit.  
5:00—Modern Obstetrics.  
Geo. A. Kamperman, M. D., Detroit.  
6:00—Dinner—Presbyterian Church.  
8:00—Public Meeting—High School Auditorium.  
Man and Microbes.  
Dr. Sinai, Extension Dept., U. of M.

The conference at Saginaw was the first held in the district. Due to the wide-spread territory included, a number of doctors drove a hundred miles. Ninety members of the constituent societies of the district attended the conference, nearly half of them coming from the adjoining societies. A special feature of the conference was a joint meeting of the doctors attending the conference with the Rotarians. Dr. Hugh Cabot, dean of the College of Medicine, spoke on "The Responsibilities of the People Toward Diseases" and Dr. C. G. Jennings on specialists. The following scientific program was presented:

#### PROGRAM

10:15—Opening Statements.  
Julius Powers, M. D., Councillor, Chairman.  
James S. Bruce, M. D., Councillor.  
Harvey George Smith, Executive Secretary.  
10:30—Essentials of the Physical Examination with Demonstration.  
C. G. Jennings, M. D., Detroit.  
11:00—Cardiac Irregularities.  
Frank N. Wilson, M. D., Ann Arbor.  
11:30—The Kidney—Surgical.  
Hugh Cabot, M. D., Ann Arbor.  
12:00—Luncheon—with Rotarians, Bancroft Hotel.  
2:00—Basal Blood Pressures.  
Frank Sladen, M. D., Detroit.  
2:40—Common Skin Diseases with Case Demonstration.  
Udo Wile, M. D., Ann Arbor.  
3:20—Treatment of Common Infections of the Kidney, Pyelitis, Nephritis, Etc.  
C. G. Jennings, M. D., Detroit.  
4:00—Infections of the Upper Respiratory Tract with their Constitutional Manifestations.  
James S. Pritchard, M. D., Battle Creek.  
4:40—Hypertension.  
Frank N. Wilson, M. D., Ann Arbor.  
5:10—Gall Bladder and Ulcer Surgery.  
Hugh Cabot, M. D., Ann Arbor.

The Port Huron conference was the second to be held in the district during the year. That interest was keen and that the members of the district are sincere in their belief in the post-graduate conference was evidenced by the fact that the members came early and stayed even later than the last speaker had anticipated. The comments of the doctors present were to the effect that they came for information and not a single one was disappointed. More than fifty were present. The following program was presented:

## PROGRAM

10:15—Opening Statements.  
A. J. MacKenzie, M. D., Councillor.  
Harvey George Smith, Executive Secretary.

10:30—Scarlet Fever.  
George H. Ramsey, M. D., Lansing.  
11:00—Fundamentals of Neurological Examination.  
Carl D. Camp, M. D., Ann Arbor.  
11:30—Common Skin Diseases, Diagnosis and Treatment.  
Henry Rockwell Varney, M. D., Detroit.  
12:00—Luncheon—Informal Talks.  
2:00—Infections of the Upper Respiratory Tract with their Constitutional Manifestations.  
Herbert M. Rich, M. D., Detroit.  
2:30—Treatment of Infections.  
J. W. Vaughan, M. D., Detroit.  
3:00—Mentality Tests.  
Carl D. Camp, M. D., Ann Arbor.  
3:40—Feeding the Normal Infant.  
B. Raymond Hoobler, M. D., Detroit.  
4:10—Head Injuries.  
Herbert E. Randall, M. D., Flint.  
4:40—Problems in Infant Feeding.  
B. Raymond Hoobler, M. D., Detroit.  
5:20—Acute Surgical Abdomen.  
J. W. Vaughan, M. D., Detroit.

The success of the five conferences was due to the interest and co-operation of the Councillors of the respective districts, the officers of the County Medical Societies and the members themselves, by helping to complete the plans for the various conferences. But no conference could be a conference unless there were speakers. If credit can be given to the members of the various societies for their interest, then unlimited credit is given to the speakers. Not a single one missed his appointment and every one gave up from one to two days' practice in order to help his fellow practitioner. "Serve your fellow man" is a good motto, and it has been completely exemplified by the speakers who have taken part in the post-graduate conferences.

## PUBLICITY

That information on Scientific Medicine and Health is desired by publishers of newspapers is evidenced by the space given to publicity on the post-graduate conferences.

The newspapers of Ironwood, Grand Rapids, Pontiac, Saginaw and Port Huron interested and informed their readers by using five columns of space. Several papers gave front page publicity.

The following excerpts give some idea as to

how the reporter and editor interprets and informs the reader on scientific medicine and health:

"Doctors cannot prevent disease unless the people of the community want their help and it is the duty of the community to see that it avails itself of medical knowledge," Dean Hugh Cabot of the University of Michigan Medical Department declared in an address Wednesday before the Rotary club. Doctors of Saginaw and vicinity, who are holding a conference here, were present at the club's meeting."

"More than 50 physicians of St. Clair, Sanilac and Lapeer counties, representing the Seventh District, were meeting at the Harrington hotel today in the second annual clinical post-graduate conference of the Michigan State Medical Society."

"Dr. C. C. Young of the State Board of Health, Lansing, spoke on scarlet fever, showing graphically how a new anti-toxin recently invented is doing wonders in absorbing the disease by application before the patient has reached a severe stage."

"Throughout the morning addresses ran the thread of better and more thorough examinations and tests of patients, and the constant trend towards improved service."

"Dr. Fred Collier of Ann Arbor was heard in a talk in which he declared that 'with our present knowledge it is possible to diagnose 999 in every 1,000 cases.' He stressed the need of careful, thorough examinations rather than hurried, incomplete tests."

## THE ANNUAL MEETING AND THE MINIMUM PROGRAM

No meeting of County Medical Societies offers better opportunity for the adoption of a program of activity than does that of the Annual Meeting. At this time all members are present, the officers and committees for the year closing, bring in their reports of progress recorded. New officers are elected or present officers are re-elected. Committees are appointed or re-appointed. Discussions follow by the members, some of whom may point out the progress made and the responsibilities of the society. Others may suggest what should be done in the future.

Among responsibilities the County Society is accountable to the following:

1. The best practice of scientific medicine within the society and the advancement of the science.
2. For fellowships and friendships among the doctors.
3. For fellowships and friendships between the members of the Society and the people.
4. For service to the community in giving information in the fundamental sciences, on leaders in Scientific Medicine and the

accomplishments in the Science of Medicine.

5. For the safeguarding of the health of the community.

6. For increasing knowledge and desire for knowledge in the Science of Medicine by the people of the country.

No plan has yet been evolved which permits of accomplishment by County Medical Societies like that of the Minimum Program. It is a guarantee to the responsibilities of a Society. The Annual Meeting should give opportunity for the adoption.

### County Society News

#### CALHOUN CO.

The ninth regular meeting of the Calhoun County Medical Society was called to order in the Post Tavern, Battle Creek, by the vice president, Dr. J. A. Elliott, at 7:45 p. m., November 3rd, following dinner.

The minutes of the previous meeting, upon motion by Dr. Sleight, and seconded by Dr. Stone, were approved as printed in the Bulletin.

It was moved by Dr. Stone that physicians of Roosevelt Hospital and the U. S. Veterans Bureau, No. 100, who are members in good standing of other State of County Societies, be allowed to become associate members of our Society, and a nominal fee of one dollar a year to be paid by each associate member. Discussion by Dr. Haughey. Seconded and carried.

Dr. Elliott introduced the speaker, Dr. Geo. Curry, of Flint, who gave a short talk on the general management of fractures. He brought out points in the pathology with particular reference to the healing process, stating that actual bone formation was not complete until the end of one year. There was a very interesting and active discussion by many of the members present.

Attendance at dinner	21
Attendance at the meeting	35

The October meeting of the Calhoun County Medical Society was called to order in the Post Tavern, Battle Creek, at 8 p. m., with an attendance of fifty.

The minutes of the previous meeting were approved as printed in the Bulletin.

The minimal program as outlined by the State Society for County Medical Societies was freely discussed and after motion by Dr. Knapp, was unanimously carried.

The physical examination program is especially valuable by obtaining regular physical examinations of the members and secondly in bringing before the public the advantages of periodic health examinations.

Dr. Stone announced the second Post Graduate Conference for the third district would be held in Battle Creek on December 10th and would be devoted largely to therapeutics. It will be remembered that the first Conference for this district was held at Sturgis and was a huge success.

Dr. W. H. Riley, who is a member of the Society, gave an interesting address on "Abnormal Movements and Gaits," taking up the anatomy and physiology of the various spinal cord tracts involved. He illustrated the lecture by moving pictures of cases.

Meeting adjourned at 10 p. m.

—Dr. L. E. Verity. Secretary.

#### BAY CO.

Three very interesting meetings have been held in the past month as follows:

September 28th—The members and visitors were guests of Doctors Jones and Wilson, of Bay City, at the Wenonah Hotel. An elaborate chicken dinner was served followed by a symposium on the subject of "Carcinoma," by Doctors Julian Louden, J. M. McCormack of Toronto, and Mr. Norman Howard, City Bacteriologist of Toronto. Over 100 physicians were present, including guests from Saginaw, Flint and the Thumb district.

October 19th—Members of the Alpena Society put on a reciprocal program at Bay City, local members having presented a program at Alpena last May.

The subjects were, "The Practitioner vs. The Specialist," by Dr. Bell; "Kidney Injuries," by Dr. J. O' Donnell; "Influence of Weather Conditions on Health," by Mr. F. Jermin.

The program was an exceptionally interesting one.

October 26th—At 6:30 p. m. the Society was addressed by Dr. H. B. VanWyck, University of Toronto, on the subject, "Toxemias of Pregnancy." Dr. Van Wyck's paper, while technical and scientific, was a most practical one and was considered one of the most instructive of the year.

Dr. Plinn Morse, Detroit, will address the Society on, "Clinical Types of Nephritis," November 9th.

Dr. L. Fernald Foster, Secretary.

#### MUSKEGON COUNTY

The Muskegon County Medical Society met as the guests of the Muskegon-Ottawa Dental Society in the banquet room of the Occidental Hotel at 6:30 p. m., November 13th. After dinner the evening was given to Dr. Chalmers J. Lyons of Ann Arbor, who gave a very instructive talk on epulis, misplaced third molars (causing pressure on branches of the fifth nerve and referred pains) or cysts of the maxillary bones. The talk was illustrated with lantern slides. The doctor answered many questions following the talk.

Many thanks to the dentists and to Dr. Lyons for the pleasant evening.

P. S. Wilson, Secretary.

#### TUSCOLA COUNTY

At the regular meeting of the Tuscola County Medical Society October 22, 1925, the following officers were elected for the year 1925-1926:

President, R. L. Dixon, Wahjemaga, Mich., Vice President, J. G. Maurer, Reece, Mich., Secretary-Treasurer, C. W. Clark, Caro, Mich., Member Mich. C. W. Clark, Secretary. Medico Legal Committee, O. J. Johnson, Mayville,

### Among the Books

*A Review and Frank Appraisal of Medical Books That are Proffered to the Profession by Publishers.*

**THE SURGICAL CLINICS OF NORTH AMERICA**  
(Issued serially, one number every other month)  
Volume V, Number IV. (Chicago Number—August, 1925.) 246 pages with 54 illustrations. Per clinic year (February, 1925, to December, 1925.) Paper, \$12; cloth, \$16 net. W. B. Saunders Company, Philadelphia and London.

**SUBMUCOUS ENDOCAPSULAR TONSIL ENDUCLEATION**—Charles Conrad Miller, M. D., Chicago.

One operator's views of tonsilectomy. A radical departure of present day methods.







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*Specification the Surest Guaranty  
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UNIFORM methods cannot be employed for the extraction and desiccation of different glands. The best method of handling each gland must be determined by experiment, the processes of manufacture in each instance being designed with reference to the peculiarities of the particular gland in question to yield a satisfactory finished preparation.

The identity of the gland is of first importance, and this is particularly true of parathyroids. It is very easy to confuse other glands with the true parathyroid glands.

All glands employed by us must be normal. They are all examined for evidence of disease. Before desiccation, all non-glandular matter is removed; this procedure reduces the weight of the glands as they reach us, often to a large extent.

The greatest care is also exercised to select and dissect only that part of the gland which is required in the manufacture of the product, such as the corpus luteum, from ovaries, the anterior lobe from the pituitary body, ovarian residue from ovaries and the posterior lobe of the pituitary. Some glands, such as the thyroid, thymus, pineal, etc., are utilized in entirety. Where fatty tissue is present in excessive quantity it is removed by solvents in a way to prevent injury to the active gland substance.

To still further increase the activity of our gland products we pass the desiccated material, after it has been finely powdered, through sieves to get rid of the remnants of inactive fibrous and connective tissue.

Our gland products therefore represent only the useful parts of the raw material we receive, and for this among other reasons contain a maximum amount of the therapeutically active portion of the glands.

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